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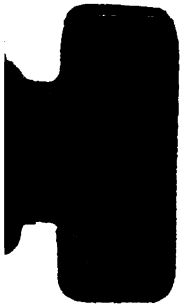

OBSTETRICAL TRANSACTIONS.

VOL. XXV.

TRANSACTIONS

OF THE

OBSTETRICAL SOCIETY

OF

LONDON.

VOL. XXV.

FOR THE YEAR 1883.

WITH A LIST OF OFFICERS, FELLOWS, ETC.

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BRITISH SUBJECTS.

Elected

1862 DUNCAN, JAMES MATTHEWS, M.D., A.M., LL.D., F.R.S. Physician-Accoucheur to, and Lecturer on Midwifery and Diseases of Women and Children at, St. Bartholomew's Hospital; 71, Brook street, Grosvenor square, W. *Council*, 1878-80. *Pres.* 1881-82. *Trans.* 12.

1870 FARRE, ARTHUR, M.D., F.R.S. (HON. PRES.), Physician-Accoucheur to H.R.H. the Princess of Wales; 18, Albert Mansions, Victoria street, Westminster. *Trans.* 1.

1871 KEILLER, ALEXANDER, M.D., F.R.S. Ed., Physician to the Royal Maternity Hospital, Lecturer on Midwifery and Diseases of Women and Children at Surgeons' Hall, Edinburgh; 21, Queen Street, Edinburgh.

1871 KIDD, GEORGE H., M.D., F.R.C.S.I., Obstetrical Surgeon to the Coombe Lying-in Hospital, and Examiner in Midwifery at the Queen's University and Royal College of Surgeons of Ireland; 30, Merrion square south, Dublin.

Elected

1870 WEST, CHARLES, M.D., F.R.C.P., Corresponding Member of the Academy of Medicine of Paris; 29, Promenade des Anglais, Nice, Alpes Maritimes, France. *Pres.* 1877-8.

FOREIGN SUBJECTS.

1872 BARKER, FORDYCE, M.D., Professor of Clinical Midwifery and Diseases of Women at the Bellevue Hospital Medical College, and Obstetric Physician to the Bellevue Hospital; Consulting Physician to the New York State Woman's Hospital, &c.; 85, Madison avenue, New York.

1863 BRAUN, CARL, M.D., Professor of Midwifery, Vienna.

1875 COURTY, AMEDÉE, M.D., Clinical Professor at the Faculty of Medicine of Montpellier.

1863 FAYE, F. C., M.D., Professor of Midwifery in the University of Christiania.

1866 HUGENBERGER, THEODOR, M.D., à la Maternité et aux Enfants Trouvés Hôpital des Accouchements, Moscow.

1866 LAZAREWITCH, J., M.D., Kharkoff, Russia. *Trans.* 3.

1864 PAJOT, CH. M.D., Professor of Midwifery to the Faculty of Medicine, Paris.

1862 SCANZONI, F. W. VON, M.D., Professor of Midwifery, Würzburg.

1877 STOLTZ, Professor, M.D. Nancy.

1866 THOMAS, ABRAHAM EVERARD SIMON, M.D., Leyden.

1872 THOMAS, T. GAILLARD, M.D., Professor of Obstetrics in the College of Physicians and Surgeons; 296, Fifth avenue, New York.

1862 VIRCHOW, RUDOLF, M.D., Professor of Pathological Anatomy in the University of Berlin.

CORRESPONDING FELLOWS.

Elected

1873 MARTIN, A. E., M.D., Berlin. *Trans.* 1.

1876 BUDIN, P., M.D., 22, Rue de l'Odéon, Paris. *Trans.* 1.

1876 CHADWICK, JAMES R., M.A., M.D., Physician for Diseases of Women, Boston City Hospital; Clarendon street, Boston, Massachusetts, U.S.

1877 GOODELL, WILLIAM, A.M., M.D., Professor of Clinical Gynæcology in the University of Pennsylvania; Philadelphia, Pennsylvania.

1876 LUSK, WILLIAM J., M.D., Professor of Obstetrics, Bellevue Hospital Medical College; New York.

1876 PREVÔT, OSCAR, M.D., Moscow.

1877 STORER, HORATIO, M.D., Boston, Massachusetts, U.S.A.

ORDINARY FELLOWS.

JANUARY, 1884.

Those marked thus (*) have paid the Composition Fee in lieu of further annual subscriptions.

The letters O.F. are prefixed to the names of the "Original Fellows" of the Society.

Elected

1879 ADDIS, PHILIP, L.R.C.P. Ed., Iver, Bucks.

1859 ALDERSEY, William Hugh, M.B. Lond., F.R.C.S., 7, St. James' Road, Surbiton.

1878 ALDRED, HENRY ALLEN, M.D., 4, Westbourne park, W.

1878 ALFORD, FREDERICK STEPHEN, 61, Haverstock hill, N.W.

1883 ALLAN, ROBERT JOHN, L.R.C.P. Ed., 1, Oxford mansion, W.

1873 ALLEN, HENRY MARCUS, F.R.C.P. Ed., 20, Regency square, Brighton.

1859 AMSDEN, GEORGE JOHN, M.D., 28, North Villas, Camden Square, N.W.

1878 ANDERSON, IZETT WILLIAM, M.D., 95, Duke street, Kingston, Jamaica. *Trans.* 1. *Hon. Loc. Sec.*

1875 ANDERSON, JOHN FORD, M.D., C.M., 28, Buckland crescent, Belsize park, N.W. *Council*, 1882.

1866 ANDREWS, HENRY CHARLES, M.D., 1, Oakley square, N.W. *Council*, 1882-3.

1859 ANDREWS, JAMES, M.D., Everleigh, Green hill, Hampstead, N.W. *Council*, 1881.

1870 APPLETON, ROBERT CARLISLE, The Bar House, Beverley.

Elected

1859 Archer, John, F.R.C.S., 9, Carpenter road, Edgbaston, Birmingham.

1883 Archibald, John, M.B., Lynton House, Brixton Rise, S.W.

1871 Argles, Frank, L.R.C.P. Ed., Hermon Lodge, Wanstead, Essex, N.E.

1861 Armstrong, John, M.D., Green street green, Dartford, Kent.

1883 Aveling, Charles Taylor, M.D., The Oaklands, Upper Clapton, E.

O.F. Aveling, James H., M.D., Physician to the Chelsea Hospital for Women; 1, Upper Wimpole Street, W. *Council*, 1865-66, 1872, 1884. *Hon. Sec.* 1873. *Hon. Lib.* 1874-6. *Vice-Pres.* 1877-8. *Trans.* 9.

1872 Ayling, Arthur H. W., 94a, Great Portland street, W.

1859 Ayling, William Henry, L.R.C.P. Ed., 94a, Great Portland street, W.

1880 Bailey, Francis James, 51, Grove Street, Liverpool.

1873 Bailey, James Johnson, M.D., L.R.C.P. Ed., Woodville Cottage, Marple, Cheshire.

1877 Baker, Albert de Winter, 2, Lawn terrace, Dawlish, Devon.

1876 Baker, John Penning, 6, York place, Portman square, W.

1880 Balls-Headley, Walter, M.D., 190, Collins street east, Melbourne, Victoria.

1869 Bantock, George Granville, M.D., Surgeon to the Samaritan Free Hospital; 12, Granville place, Portman square, W. *Council*, 1874-6. *Trans.* 2.

O.F. Barnes, Robert, M.D., F.R.C.P., Obstetric Physician to, and Lecturer on Midwifery at, St. George's Hospital; 15, Harley street, Cavendish square, W. *Vice-Pres.* 1859-60. *Council*, 1861-62, 1867. *Treas.* 1863-64. *Pres.* 1865-66. *Trans.* 32. *Trustee.*

1875 Barnes, R. S. Fancourt, M.D., Physician to the British Lying-in Hospital; Assistant Obstetric Physician to the Great Northern Hospital; Physician to the Chelsea Hospital for Women; Physician to the Royal Maternity Charity; 7, Queen Anne street, Cavendish square, W. *Council*, 1879-81. *Trans.* 2.

Elected

1877 BARNES, THOMAS HENRY, M.D., 54, London road, Croydon.

1861* BARTRUM, JOHN S., F.R.C.S., Surgeon to the Bath General Hospital; 13, Gay street, Bath. *Hon. Loc. Sec. Council*, 1877-9.

1866 BASSETT, JOHN, M.D., Professor of Midwifery at the Queen's College, Birmingham; 144, Hockley Hill, Birmingham. *Council*, 1874-6. *Vice.-Pres.* 1880-2. *Trans.* 3.

1873 BATE, GEORGE PADDOCK, M.D., L.R.C.P. Ed., 412, Bethnal Green road, E; and 2, Northumberland Houses, King Edward road, Hackney. *Council*, 1882-4.

1867 BATTEN, RAYNER W., M.D., Physician to the Gloucester General Infirmary; 1, Brunswick square, Gloucester. *Hon. Loc. Sec.*

1871 BEACH, FLETCHER, M.B., Darenth Asylum, Dartford, Kent.

1871 BEADLES, ARTHUR, Park House, Dartmouth Park, Forest hill, S.E.

1866 BELCHER, HENRY, M.D., L.R.C.P. Ed.; 12, Pavilion parade, Brighton.

1871 BELL, ROBERT, M.D. Glasg., 29, Lynedoch street, Glasgow.

1880 BENINGTON, ROBERT CREWDSON, 108, Denmark hill, S.E.

1873* BENNET, JAMES HENRY, M.D., The Ferns, Weybridge, and Mentone. *Council*, 1881-3. *Trans.* 1.

O.F. BERRY, SAMUEL, F.R.C.S., Consulting Surgeon-Accoucheur to the Queen's Hospital, and Professor of Midwifery and the Diseases of Women and Children in the Queen's College, Birmingham; Hatfield, Cavendish road, Clapham park, S.W. *Vice-Pres.* 1859. *Trans.* 1.

1883 BERTOLACCI, J. HEWETSON, Varden House, St. John's hill, New Wandsworth, S.W.

1879 BIGGS, J. M., 6, Sunnyside villas, Child's hill, Hendon, N.W.

1878 BINDON, WM. JOHN VEREKER, M.D., D.Sc., F.R.C.S. Ed. (Travelling).

1868 BLACK, JAMES WATT, M.D., Obstetric Physician to the Charing Cross Hospital; 15, Clarges street, Piccadilly, W. *Council*, 1872-4.

Elected

1880 BLACK, ROBERT FRANCIS, L.R.C.P. Ed., Examiner in Midwifery, Trinidad Medical Board; 4, Chacon street, Port of Spain, Trinidad.

1861* BLAKE, THOMAS WILLIAM, Hurstbourne, Bournemouth, Hants.

1872 BLAND, GEORGE, Surgeon to the Macclesfield Infirmary; Park Green, Macclesfield.

1882 BLOTT, HERBERT, 38, Osnaburgh street, N.W.

1883 BONNEY, WILLIAM AUGUSTUS, M.D., 145, Beaufort street, Chelsea, S.W.

1882 BONSALL, GEORGE R. EDLESTON, L.R.C.P. Ed., Alexandra Villa, Elthorne road, Hornsey rise, N.

1872 BOSWORTH, JOHN ROUTLEDGE, Sutton, Surrey.

1866 BOULTON, PERCY, M.D., Physician to the Samaritan Free Hospital; Obstetric Physician to Out-Patients, Queen Charlotte's Lying-in Hospital; 6, Seymour street, Portman square, W. *Council*, 1878-80. *Trans.* 3.

1877 BOWKETT, THOMAS EDWARD, 145, East India Road, Poplar, E.

1869 BOYD, HERBERT, Surgeon-Major, 14th Sikhs [agents, Henry S. King and Co., 45, Pall Mall].

1877 BRADLEY, MICHAEL MCWILLIAMS, M.B., Jarrow-on-Tyne.

1873 BRAITHWAITE, JAMES, M.D., Lecturer on Midwifery and Diseases of Women and Children at the Leeds School of Medicine; Assistant Surgeon to the Leeds Hospital for Women and Children; 16, Clarendon road, Little Woodhouse, Leeds. *Vice-Pres.* 1877-9. *Trans.* 3. *Hon. Loc. Sec.*

1862 BRAITHWAITE, WILLIAM, M.D., late Lecturer on Midwifery, Leeds School of Medicine; Clarendon House, 20, Clarendon road, Leeds. *Council*, 1869-70.

1880 BRANFOOT, ARTHUR MUDGE, M.B., Superintendent of the Government Lying-in Hospital, Madras, and Professor of Midwifery and Diseases of Women and Children in the Madras Medical College, Pantheon road, Madras. *Hon. Loc. Sec.*

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1875 BREWER, ALEXANDER HAMPTON, 201, Queen's road, Dalston, E. *Trans.* 1.

1862 BRICKWELL, JOHN, Sawbridgeworth, Herts.

1872 BRIDGWATER, THOMAS, M.B., Harrow-on-the-Hill, N.W.

1864 BRIGHT, JOHN MEABURN, M.D., The Glen, Forest hill, Sydenham, S.E. *Council,* 1873-74.

1869 BRISBANE, JAMES, M.D., 21, Park road, Regent's park, N.W.

1866 BRODIE, GEORGE B., M.D., Consulting Physician-Accoucheur to Queen Charlotte's Lying-in Hospital; 3, Chesterfield street, Mayfair, W. *Council,* 1873-75.

1876 BROOKHOUSE, CHARLES TURING, M.D., 43, Manor road, New Cross, S.E.

1868 BROWN, ANDREW, M.D. St. And., 1, Bartholomew road, Kentish town, N.W. *Trans.* 1.

1865 BROWN, D. DYCE, M.D., 29, Seymour Street, Portman square, W.

1878 BROWN, GEORGE, 3, Gibson square, Islington.

1866 BROWN, GEORGE DRANSFIELD, Henley villa, Uxbridge road, Ealing, Middlesex.

1878 BROWNING, BENJAMIN, 70, Union road, Rotherhithe.

1876 BRUNJES, MARTIN, 27, Edgware road, W.

1865 BRUNTON, JOHN, M.D., M.A., Surgeon to the Royal Maternity Charity; 21, Euston road, N.W. *Council,* 1871-3. *Vice-Pres.* 1882-4. *Trans.* 6.

1863 BRYANT, THOMAS, F.R.C.S., Surgeon to Guy's Hospital; 53, Upper Brook street, W. *Council,* 1866-67. *Trans.* 2.

O.F. BRYANT, WALTER JOHN, F.R.C.S., M.R.C.P. Ed., 23A, Sussex square, Hyde park gardens, W. *Council,* 1859.

1870 BUCK, JOSEPH RANDLE, L.R.C.P. Ed., 26, Sidbury, Worcester.

1880 BUKSH, RAHEEM, London Hospital, E.

1882* BULLER, AUDLEY CECIL.

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1878 BUNCOMBE, J. DOBREE, Victoria West, Cape Colony.

1861 BUNNY, JOSEPH, M.D., Hon. Surgeon to the Newbury Dispensary; Northbrook street, Newbury, Berks.

1877 BURCHELL, PETER LODWICK, M.B., Surgeon-Accoucheur to the City of London Lying-in Hospital; 2, Kingsland road, E. *Council*, 1882-4. *Trans.* 1.

1877 BURD, EDWARD, M.D., M.C., Senior Physician to the Salop Infirmary; Newport House, Shrewsbury. *Hon. Loc. Sec.*

1878 BURN, STACEY SOUTHERDON, Richmond, Surrey.

1862 BURTON, JOHN MOULDEN, F.R.C.S., Lee park lodge, Lee, Kent, S.E. *Council*, 1868-69.

1878 BUTLER-SMYTHE, ALBERT CHARLES, M.R.C.P. Edin., 35, Brook street, Grosvenor square, W.

1868 BUTT, WILLIAM FREDERICK, L.R.C.P. Lond., 25 Park street, Park lane, W. *Council*, 1876-78.

1883 CALDWELL, WILLIAM T. D., M.D., 284, Kennington park road, S.E.

1883 CAMERON, CHARLES HAMILTON HONE, L.R.C.P. Lond., Lochiel, Harlesden, Willesden, N.W.

1861 CANDLISH, HENRY, M.D., Physician to the Alnwick Infirmary; 26, Fenkle street, Alnwick, Northumberland.

1861 CANDY, JOHN, M.D., Surgeon-Major, Army Medical Department, Station Hospital, Portland. [Messrs. Wm. Watson & Co., Anglo-Indian Agency, 27, Leadenhall street, E.C.] 3, Prospect place, Portland.

1872 CARLESS, EDWARD NICHOLLS, M.B., C.M., Lansdowne grove, Devizes, Wilts.

1863 CARLYLE, DAVID, M.D., 2, The Crescent, Carlisle. *Trans.* 1. *Hon. Loc. Sec.*

1872 CARTER, CHARLES HENRY, M.D., Physician to the Hospital for Women; 45, Great Cumberland place, Hyde Park, W. *Council*, 1880-2. *Trans.* 4.

Elected

1877 CARVER, EUSTACE JOHN, Fairlawn, Fulham.

1869 CASKIE, JOHN BOYD, M.D., 19, Tyndale place, Islington, N.

1878 CASKIE, WILLIAM ALEX., M.A., M.B., Manse Court, 17, Main street, Largs, Ayrshire, N. B.

1863 CAYZER, THOMAS, Mayfield, Aigburth, Liverpool.

1875 CHAFFERS, EDWARD, F.R.C.S., 54, North street, Keighley, Yorkshire.

1873 CHALMERS, JOHN, M.D., 43, Caledonian road, N.

1876 CHAMPNEYS, FRANCIS HENRY, M.A., M.B.Oxon., F.R.C.P., Assistant Obstetric Physician to St. George's Hospital, 60, Great Cumberland place, W. *Council*, 1880-1. *Hon. Lib.* 1882-3. *Hon. Sec.* 1884. *Trans.* 5.

1859 CHANCE, EDWARD JOHN, F.R.C.S., Surgeon to the Metropolitan Free Hospital and City Orthopædic Hospital; 59, Old Broad street, City, E.C.

1867* CHARLES, T. EDMONDSTOUNE, M.D., Cannes, France. *Council*, 1882-4.

1874 CHARLESWORTH, JAMES, 25, Birch terrace, Hanley, Staffordshire.

1868 CHILD, EDWIN, "Vernham," New Malden, Kingston-on-Thames, Surrey.

1883 CHILDS, CHRISTOPHER, M.A., M.B. Oxon., 2, Royal terrace, Weymouth.

1863* CHISHOLM, EDWIN, M.D., Abergeldie, Ashfield, near Sydney, New South Wales. [Per Messrs. Turner and Henderson, care of Messrs. W. Dawson, 121, Cannon street, E.C.].

1879 CHURCHILL, ALEX. FERRIER, M.B., Surgeon-Major.

1883 CLAPHAM, EDWARD, M.D., 29, Lingfield road, Wimbledon.

1859 CLAREMONT, CLAUDE CLARKE, Millbrook House, 1, Hampstead road, N.W.

1859 CLARK, JAMES FENN, Clent House, Beauchamp square, Leamington. *Hon. Loc. Soc.*

1879 CLARKE, REGINALD, South Lodge, Lee park, Lee, S.E.

Elected

1872 CLARKE, WILLIAM MICHELL, late Surgeon to the British General Hospital; 2, York buildings, Clifton, Bristol.

O.F. CLAY, CHARLES, M.D., late Lecturer on Midwifery and Clinical Medicine in St. Mary's Hospital, Manchester; Audenshaw Lodge, Audenshaw; and 101, Piccadilly, Manchester. *Council*, 1863-65. *Trans.* 3.

1876 CLAY, GEORGE LANGSFORD, West View, 443, Moseley road, Highgate, Birmingham.

O.F. CLAY, JOHN, Professor of Midwifery, Queen's College, Birmingham; Allan House, Steelhouse lane, Birmingham. *Council*, 1868-69. *Vice-Pres.* 1872-4.

O.F. CLEVELAND, WILLIAM FREDERICK, M.D., Stuart villa, 199, Maida vale, W. *Council*, 1863-64. *Vice-Pres.* 1875-77. *Trans.* 1.

1881 CLOSE, JAMES ALEX, M.B., L.R.C.P. Ed., Summerfield, St. Clair Co., Illinois, U.S.A.

1865* COATES, CHARLES, M.D., Physician to the Bath General and Royal United Hospitals; 10, Circus, Bath.

1882 COATES, FREDERICK WILLIAM, M.D., St. John street, Salisbury.

1883 COATEL, WILLIAM, London Hospital, E.

1878 COCKELL, FREDERICK EDGAR, Jun., 176, Richmond road, Dalston, E.

1875 COFFIN, RICHARD JAS. MAITLAND, F.R.C.P. Ed., Alwington house, Baron's court, West Kensington, W.

1878 COFFIN, THOMAS WALKER, 81, Queen's crescent, Haverstock hill, N.W.

1875 COLE, RICHARD BEVERLY, M.D. Jefferson Coll. Philad., 218, Post street, San Francisco, California, U.S.

1876 COLEMAN, MATTHEW OWEN, M.D., 5, Victoria terrace, Surbiton, Surrey.

1877 COLMAN, WALTER TAWELL, Hon. Surgeon to the Brighton Hospital for Women; 87, Buckingham road, Brighton,

1866 COOMBS, JAMES, M.D., Bedford.

Elected

1883 Cooney, John Edwin, L.R.C.P. Ed., 3, Arnold terrace, Greyhound road, Fulham, S.W.

1873 Cooper, Frank W., Leytonstone, Essex.

1874 Cooper, Herbert, L.R.C.P. Ed., Rosslyn hill, Hampstead, N.W.

1861 Cooper, John, M.R.C.P. Ed., Clapham rise, S.W.

1875 Cordes, Aug., M.D., Professor of Obstetrics at the University of Geneva; 12, Rue Bellot, Geneva. *Trans.* 1.

1883 Corner, Cursham, 128, Mile End road, E.

1866 Cornwall, James, F.R.C.S., Fairford, Gloucestershire.

1860 Corry, Thomas Charles Steuart, M.D., Senior Surgeon to the Belfast General Dispensary; Ormeau terrace, Belfast. *Council*, 1867. *Hon. Loc. Sec.*

1859 Cory, Frederick Charles, M.D., Portland villa, Buckhurst hill, Essex. *Council*, 1867-69. *Trans.* 1.

1875 Cory, Robert, M.D., Assistant Obstetric Physician to St. Thomas's Hospital; 73, Lambeth Palace road, S.E. *Council*, 1879-81, 1884. *Trans.* 1.

1879 Cowan, George Hoyle, M.B., Napanee, Ontario, Canada.

1869 Cox, Richard, L.R.C.P. Ed., Theale, near Reading.

1877 Crawford, James, L.K.Q.C.P.I., Ightham, Sevenoaks.

1882 Crease, James Robertson, F.R.C.S. Ed., L.R.C.P. Ed., 2, Ogle Terrace, South Shields.

1881 Creasy, James Gideon, Brasted, Sevenoaks, Kent.

1874 Cremen, Patrick John, M.D., 4, Camden place, Cork.

1876 Crew, John, Higham Ferrers, Northamptonshire.

1859 Croft, J. McGrigor A. T., M.D., M.R.C.P., 15, Abbey road, St. John's Wood, N.W.

1881 Cronk, Herbert George, M.B. Camb., Repton, near Burton-on-Trent.

1869 Cross, Robert Shackleford, Petersfield, Hants.

1875* Cullingworth, Charles James, M.D., M.R.C.P., Physician to St. Mary's Hospital, Manchester; Lecturer on Medical Jurisprudence at the Owens College School of Medicine; 260, Oxford road, Manchester. *Council*, 1883-4. *Trans.* 2.

Elected

1862 CUMBERBATCH, LAWRENCE TRENT, M.D., 25, Cadogan place, Belgrave square, S.W. *Council*, 1868-70. *Vice-Pres.* 1878.

1867 CUOLAHAN, HUGH, M.D., 9, Grange road, Bermondsey, S.E.

1859 CURGENVEN, J. BRENDON, 11, Craven hill gardens, Bayswater, W. *Council*, 1870-72. *Trans.* 3.

1868 DALY, FREDERICK HENRY, M.D., 185, Amhurst road, Hackney Downs, N.E. *Council*, 1877-9. *Vice-Pres.* 1883-4. *Trans.* 2.

1882 DAMBRILL-DAVIES, WILLIAM R., Sandbach, Cheshire.

1883 DAVIDSON, CHARLES, F.R.C.S. Ed., 29, Cassland road, Hackney, E.

1876 DAVIES, GOMER, L.R.C.P. Ed., 9, Pembridge villas, Bayswater, W.

1878 DAVIES, HENRY NAUNTON, Glyn Rhondda House, Cymer, Pontypridd, Glamorganshire.

O.F. DAVIS, JOHN HALL, M.D., F.R.C.P., Obstetric Physician to, and Lecturer on Midwifery and Diseases of Women and Children at, the Middlesex Hospital; Physician to the Royal Maternity Charity; Consulting Physician-Accoucheur to the St. Pancras Infirmary; 37, Gloucester place, Portman square, W., and 41, Boundary road, N.W. *Council*, 1859, 1864-65. *Vice-Pres.* 1861-63. *Pres.* 1867-68. *Trans.* 14.

1877 DAWSON, SMITH HOUSTON, M.D., Campden villa, 203, Maida vale, W.

1878 DAY, EDMUND OVERMAN, Assistant Surgeon to the Royal Infirmary for Children and Women, Waterloo Bridge road; 78, Waterloo road, S.E.

1880 DAY, WILLIAM HANKES, Surgeon to the City Prisons, Norwich; All Saints' Green, Norwich.

1859 DAY, WILLIAM HENRY, M.D., Physician to the Samaritan Free Hospital for Women and Children; 10, Manchester square, W. *Council*, 1873-75.

1877 DEWAR, JOHN, L.R.C.P. Ed., 132, Sloane street, S.W.

1860 DICKENSON, JOHN, F.R.C.S., Hon. Surgeon to the Wrexham Infirmary; Wrexham, Denbighshire.

Elected

1879 DOLAN, THOMAS MICHAEL, L.R.C.P. Ed., 32, North parade, Halifax.

1879 DORAN, ALBAN H. G., F.R.C.S., Surgeon to Out-Patients, Samaritan Free Hospital; 51, Seymour street, Portman square, W. *Council*, 1883-4. *Trans.* 4.

1880 DOWNES, DENIS SIDNEY, L.K.Q.C.P. I., 55, Kentish town road, N.W.

O.F. DRAGE, CHARLES, M.D., Hatfield, Herts. *Council*, 1861-4. *Trans.* 1.

1871 DRAKE-BROCKMAN, EDWARD FORSTER, F.R.C S., L.R.C.P. Lond., Surgeon-Major; Superintendent Eye Infirmary, Madras; Professor of Physiology and Ophthalmology, Madras Medical College. [*Per* Messrs. Richardson and Co., East India Army Agency, 13, Pall Mall, S.W.]

1878 DRING, WILLIAM ERNEST, L.R.C.P. Ed., Boughton-under-Blean, Faversham, Kent.

1877 DUNCAN, ALEXANDER GEORGE, M.B., Calton house, Amhurst park, Stamford hill, N.E.

O.F. DUNCAN, JAMES, M.B., 8, Henrietta street, Covent garden, W.C. *Council*, 1873-74.

1882 DUNCAN, WILLIAM ARCHDECKNE, M.D., St. Thomas's Hospital, S.E.

1882 DUTT, UPENDRA KRISHNA, L.R.C.P. Ed., 20, Beadon street, Calcutta.

1882 EADY, GEORGE JOHN, M.R.C.P. Ed., Roslin, Caterham Valley.

1871 EASTES, GEORGE, M.B., F.R.C.S., Surgeon-Accoucheur to the Western General Dispensary; 69, Connaught street, Hyde park square, W. *Council*, 1878-80.

1878 EATON, JOHN CHAMBERLIN, Ancaster, Grantham, Lincolnshire.

1883 ECCLES, F. RICHARD, M.D., London, Ontario, Canada.

1867 EDIS, ARTHUR W., M.D., Assistant-Physician-Accoucheur to the Middlesex Hospital; Physician to the Chelsea Hospital for Women; 22, Wimpole street, W. *Council*, 1873-74. *Hon. Sec.* 1874-77. *Vice-Pres.* 1878-80. *Trans.* 8.

Elected

1879 ELDER, GEORGE, M.B., C.M., Surgeon to the Hospital for Women, Nottingham; 17, Regent street, Nottingham. *Hon. Loc. Sec.*

1879 ELKINGTON, ARTHUR GUY, Surgeon-Major, Grenadier Guards, 52, Gillingham street, Eccleston square, S.W.

1878 ELLERY, RICHARD, L.R.C.P. Ed., Plympton, Devon.

1873 ENGELMANN, GEORGE JULIUS, A.M., M.D., 3003, Locust street, St. Louis, Missouri, U.S.

1875 EWART, JOHN HENRY, Eastney, Devonshire place, Eastbourne.

1875 EYELEY, JOSEPH FREDERICK, L.R.C.P. Lond., 5, Hill-park crescent, Plymouth. *Hon. Loc. Sec.*

1876 FARNCOMBE, RICHARD, 40, Belgrave street, Balsall heath, Birmingham.

1869 FARQUHAR, WILLIAM, M.D., Surgeon-Major, Madras Army, Ootacamund, Madras Presidency. [*Per* W. Farquhar, 3, Powis square, W.]

1861 FARR, GEO. F., L.R.C.P. Ed., Slade House, 175, Kennington road, S.E.

1882 FARRAR, JOSEPH, L.R.C.P. Ed., 8, Queen's terrace, Morecambe.

1881 FARRER, GEORGE ALBERT, Spring villa, Brighouse, Halifax.

1879 FAYRER, SIR JOSEPH, M.D., K.C.S.I., Hon. Physician to H.M. the Queen and to H.R.H. the Prince of Wales; Physician to H.R.H. the Duke of Edinburgh; President, Medical Board, India Office, &c.; 53, Wimpole street, Cavendish square. *Council*, 1883.

1868 FEGAN, RICHARD, M.D., Westcombe park, Blackheath, S.E.

1873 FINEGAN, JAMES HERBERT, M.D., Obstetric Surgeon to, and Lecturer on Midwifery at, the Liverpool Lying-in Hospital; 48, Rodney street, Liverpool.

1870 FISHER, JOHN MOORE, M.D., 6, Pryme street, Hull.

1882 FITZGERALD, CHARLES EGERTON, M.D., West Terrace, Folkestone.

1878 FLINT, ARTHUR, L.R.C.P., Westgate-on-Sea, Isle of Thanet.

1877* FONMARTIN, HENRY DE, M.D., Knaphill, Woking, Surrey.

1877* FORD, JAMES, M.D., Eltham, Kent.

Elected

1865 FOWLER, JAMES, F.S.A., Hon. Surgeon to the Clayton Hospital and Wakefield General Dispensary; 13, South Parade, Wakefield. *Council*, 1872-4. *Hon. Loc. Sec.*

1862 FRAIN, JOSEPH, M.D., Hon. Surgeon to the South Shields Dispensary; Frederick street, South Shields.

1875 FRASER, ANGUS, M.D., Physician and Lecturer on Clinical Medicine to the Aberdeen Royal Infirmary; 232, Union street, Aberdeen.

1867 FREEMAN, HENRY W., 24, Circus, Bath.

1881 FRODSHAM, JOHN MILL, M.D., Denham House, Upper Streatham.

1880 FRY, JOHN BLOUNT, Swindon, Wiltshire.

1867 FULLER, CHARLES C., 33, Albany street, Regent's park, N.W.

1880 FULLER, HENRY ROXBURGH, M.A. Cantab., 45, Curzon street, Mayfair, W.

1874* GALABIN, ALFRED LEWIS, M.A., M.D., Obstetric Physician to, and Lecturer on Midwifery at, Guy's Hospital; 49, Wimpole street, Cavendish square, W. *Council*, 1876-78. *Hon. Lib.* 1879. *Hon. Sec.* 1880-3. *Vice-Pres.* 1884. *Trans.* 11.

1863 GALTON, JOHN H, M.D., Woodside road, Upper Norwood, S.E. *Council*, 1874-6.

1881 GANDY, WILLIAM, Hill Top, Gipsy hill, S.E.

1879 GARDNER, JOHN TWINAME, 6, Hillsboro' terrace, Ilfracombe.

1872 GARDNER, WILLIAM, M.A., M.D., Professor of Gynæcology, McGill University; Physician to the University Dispensary for Women; Physician to the Montreal General Hospital; 914, Dorchester street, Montreal, Canada.

1863 GARMAN, HENRY VINCENT, Kent House, 6, Bow road, E.

1876 GARNER, JOHN, 52, New Hall street, Birmingham.

1879 GARSTANG, THOMAS W. HARROPP, Dobcross, near Oldham.

1873 GARTON, WILLIAM, M.D., F.R.C.S., Hardshaw street, St. Helen's, Lancashire.

1875 GAWITH, J. JACKSON, 23, Westbourne park terrace, W.

1877 GELL, THOMAS SILVESTER, M.D.

Elected

1859 GERVIS, HENRY, M.D., F.R.C.P., Obstetric Physician to, and Lecturer upon Obstetric Medicine at, St. Thomas's Hospital; Examiner in Obstetric Medicine at the University of London; 40, Harley street, Cavendish square. *Council*, 1864-66. *Hon. Sec.* 1867-70. *Vice-Pres.* 1871-3. *Treas.* 1878-81. *Pres.* 1883-4. *Trans.* 7.

1866 GERVIS, FREDERICK HEUDEBOURCK, 1, Fellows road, Haverstock hill, N.W. *Council*, 1877-9. *Trans.* 1.

1875 GIBBINGS, ALFRED THOMAS, M.D., 93, Richmond road, Dalston, N.E.

1883 GIBBONS, ROBERT ALEXANDER, M.D., 32, Cadogan place, S.W.

1874 GIBSON, JAMES EDWARD, Hillside, West Cowes, Isle of Wight.

1866 GIDDINGS, WILLIAM KITTO, L.R.C.P. Ed., Shaftesbury House, Calverley, near Leeds, Yorkshire.

1877 GIFFARD, DOUGLAS WILLIAM, 5, Pavilion Parade, Old Steyne, Brighton.

1875 GILES, PETER BROOME, L.R.C.P. Ed., The Quinta, Brobury, Hereford.

1869 GILL, WILLIAM, L.R.C.P. Lond., 11, Russell square, W.C.

1867 GITTINS, JOHN, L.R.C.P. Ed., St. Olave's Union, Parish street, Southwark, 134, Tooley street, S.E.

1871 GODDARD, EUGENE, L.R.C.P. Lond., North Lynne, Highbury New Park, N. *Trans.* 1.

1876 GODFRAY, ALFRED CHARLES, M.B., 43, La Motte street, Jersey.

1877 GODSON, CHARLES, F.R.C.S., 1, Astwood road, Cromwell road, South Kensington, S.W.

1871 GODSON, CLEMENT, M.D., C.M., Consulting Physician to the City of London Lying-in Hospital; Assistant Physician-Accoucheur to St. Bartholomew's Hospital; 9, Grosvenor street, W. *Council*, 1876-77. *Hon. Sec.* 1878-81. *Vice-Pres.* 1882-4. *Trans.* 5.

1868 GODWIN, ASHTON, M.D., 28, Brompton crescent, Brompton, S.W.

Elected

1873 GOLDSMITH, JOHN, M.D., Highworth House, Worthing, Sussex.

1873 GOODCHILD, NATHANIEL, L.R.C.P. Ed., 9, Highgate road, N.W.

1883 GORDON, JOHN, M.D., 10, Amersham road, New Cross, S.E.

1869 GOSS, TREGENNA BIDDULPH, 36, The Paragon, Bath.

1875 GRAY, JAMES, M.D., 15, Newton terrace, Glasgow.

1874 GREENE, WILLIAM THOMAS, M.D., Moira House, Peckham rye, S.E. *Council*, 1880. *Trans.* 1.

1863 GRIFFITH, G. DE GORREQUER, Lecturer on Diseases of Women and Children at the Zenana and Medical Mission Training School for Ladies; 34, St. George's square, S.W. *Trans.* 2.

1869 GRIFFITH, JOHN T., M.D., Talfourd House, Camberwell, S.E. *Council*, 1884.

1879 GRIFFITH WALTER SPENCER ANDERSON, F.R.C.S., M.R.C.P., Tutor in Obstetrics and Gynæcology at St. Bartholomew's Hospital; 35, Great Ormond Street, W.C. *Trans.* 1.

1880 GRIFFITHS, GRIFFITH, Bryncelyn, Pontardawe, Swansea, place, Valley.

1870 GRIGG, WILLIAM CHAPMAN, M.D., Physician to the Inpatients, Queen Charlotte's Lying-in Hospital; Assistant Obstetric Physician to the Westminster Hospital; Assistant-Physician to the Victoria Hospital for Children; 6, Curzon street, Mayfair. *Council*, 1875-77.

O.F. GRIMSDALE, THOS. F., L.R.C.P. Ed., Consulting Surgeon to the Lying-in Hospital, and late Lecturer on Diseases of Children, &c., at the Royal Infirmary School of Medicine; 29, Rodney street, Liverpool. *Council*, 1861-62. *Vice-Pres.* 1875-76.

1882 GRIPPER, WALTER, M.B. Cantab., M.R.C.S., 6, Sumner Place, South Kensington, S.W.

1880 GROGONO, WALTER ATKINS, 216, High Street, Stratford, E.

1877 GROSHOLZ, FREDERICK HERMANN VARLEY, L.K.Q.C.P.I., Pier House, Aberdovey, Merionethshire, North Wales.

Elected

1876 GROTH, ERNST R. G., M.D., 5, Weymouth street, Portland place, W.

1879 GROVE, WILLIAM RICHARD, M.D., St. Ives, Huntingdonshire.

1867 HADAWAY, JAMES, L.R.C.P. Ed., 47B, Welbeck street, Cavendish square, W.

1876 HADDEN, JOHN, M.D., 31, West street, Horncastle, Lincolnshire.

1881 HAIR, JAMES, M.D., Westgate, Peterborough.

1859 HALL, FREDERICK, 1, Jermyn street, St. James's, S.W.

1871 HALLOWES, FREDERICK B., Redhill, Reigate, Surrey.

1880 HAMES, GEORGE HENRY, F.R.C.S., 2, Queensborough terrace, W.

1880 HAMILTON, THOMAS, M.D., Melrose House, Green lanes, Stoke Newington, N.

1860 HARDEY, KEY, Surgeon to the West City Dispensary; 4, Wardrobe place, Doctors' Commons, E.C.

1877 HARPER, GERALD S., 5, Hertford street, May Fair, W.

1878 HARRIES, THOMAS DAVIES, F.R.C.S., 36, North Parade, Aberystwith, Cardiganshire.

O.F. HARRINSON, ISAAC, F.R.C.S., Castle street, Reading, Berks. *Council*, 1862-65. *Hon. Loc. Sec.*

1862 HARRIS, CHARLES, M.D., Northiam, Ashford, Kent.

1872 HARRIS, HENRY, M.D., F.R.C.S., Trengweath place, Redruth Cornwall.

1867 HARRIS, WILLIAM H., M.D., late Professor of Midwifery in the Madras Medical College, and Superintendent of the Lying-in Hospital, Madras; 78, Oxford gardens, W. [agent: Mr. H. K. Lewis, Gower street].

1861 HARRIS, WILLIAM JOHN, 26, Marine Parade, Worthing. *Hon. Loc. Sec.*

1880 HARRISON, RICHARD CHARLTON, 4, The Terrace, St. Mary's vale, Chatham.

1879 HARVEY, GEORGE, L.R.C.P. Ed., Wirksworth, Derbyshire.

1880 HARVEY, JOHN STEPHENSON, 26, Rue Wissocq, Boulogne-sur-Mer, France.

Elected

1865 HARVEY, ROBERT, M.D., 52, Chowringhee, Calcutta. [Per Messrs. Cochran and Anderson, 152, Union street, Aberdeen.] *Trans.* 1. *Hon. Loc. Sec.*

1865 HAYES, HAWKESLEY ROCHE, Basingstoke, Hants.

1873 HAYES, THOMAS CRAWFORD, M.D., Assistant Obstetric Physician to King's College Hospital; 17, Clarges street, Piccadilly, W. *Council*, 1876-78.

1880 HEATH, WILLIAM LENTON, M.B., 85, Gloucester Road, South Kensington, S.W. *Trans.* 1.

1867 HEMBROUGH, JOHN WILLIAM, Ivy cottage, Waltham, Grimsby.

1881 HEPBURN, WILLIAM ALEX., Rosslyn House, Coxhoe, Co. Durham.

1876 HERMAN, GEORGE ERNEST, M.B., Obstetric Physician to, and Lecturer on Midwifery at, the London Hospital, 7, West street, Finsbury circus, E.C. *Council*, 1878-79. *Hon. Lib.* 1880-1. *Hon. Sec.* 1882-4. *Trans.* 5.

O.F. HEWITT, GRAILY, M.D., F.R.C.P., Professor of Midwifery in University College, London, and Obstetric Physician to University College Hospital; 36, Berkeley square, W. *Hon. Sec.* 1859-64. *Treas.* 1865-66. *Vice-Pres.* 1867-68. *Pres.* 1869-70. *Trans.* 20.

1867 HICKINBOTHAM, JAMES, M.D., Physician to the Birmingham and Midland Hospital for Women; 26, Broad street, Birmingham. *Council*, 1884. *Trans.* 2.

1876 HICKS, EDWARD JOHN W., M.D., C.M., Regent's road, Great Yarmouth.

1860 HICKS, JOHN BRAXTON, M.D., F.R.C.P., F.R.S., Consulting Obstetric Physician to Guy's Hospital; 24, George street, Hanover square. *Council*, 1861-2, 1869. *Hon. Sec.* 1863-65. *Vice-Pres.* 1866-68. *Treas.* 1870. *Pres.* 1871-2. *Trans.* 36.

1860 HIGGS, THOMAS FREDERIC, L.R.C.P. Ed., Beaconsfield House, Dudley, Worcestershire.

1879 HILL, T. WOOD, L.R.C.P. Ed., 96, Earl's court road, W.

Elected

1872 HILLIARD, ROBERT HARVEY, M.D., Aylesbury.

1876 HOAR, WILLIAM. [Care of E. Ground, M.B., Gabriel's hill, Maidstone.]

O.F. HODGES, RICHARD, M.D., F.R.C.S., 25, York place, Baker street, W. *Trans.* 3.

1864 HOFFMEISTER, WILLIAM CARTER, M.D., Surgeon to the Queen in the Isle of Wight; Clifton House, Cowes, Isle of Wight. *Council*, 1877-9.

1875 HOLLINGS, EDWIN, L.R.C.P. Ed., 4, Gordon street, Gordon square, W.C.

1859 HOLMAN, CONSTANTINE, M.D., The Barons, Reigate, Surrey. *Council*, 1867-69. *Vice-Pres.* 1870-71.

1880 HONIBALL, OSCAR DUNSCOMBE, M.D., New Amsterdam, British Guiana.

1864 HOOD, WHARTON PETER, M.D., 65, Upper Berkeley street, Portman square, W.

1872 HOPE, WILLIAM, M.D., Physician to Queen Charlotte's Lying-in Hospital; 56, Curzon street, Mayfair, W. *Council*, 1877-9.

1883* HORROCKS, PETER, M.D., M.R.C.P. Lond., Assistant Obstetric Physician to, and Demonstrator of Practical Obstetrics at, Guy's Hospital; 9, St. Thomas's street, S.E.

1876 HORSMAN, GODFREY CHARLES, 22, King street, Portman square, W.

1883 HOSKIN, THEOPHILUS, L.R.C.P. Lond., 186, Amhurst road, N.E.

1883 HOUCHIN, EDMUND KING, L.R.C.P. Ed., 29, High street, Stepney, E.

1877 HOWELL, HORACE SYDNEY, M.D, 11, Boundary road, St. John's Wood, N.W.

1879 HUBBARD, THOMAS WELLS, Lenham, Bromley, Kent.

1882 HUNT, JOSEPH WILLIAM, M.D., B.S., 101, Queen's road, Dalston, E.

1883 HURFORD, CHARLES, L.R.C.S.I., 258, Caledonian road, N.

Elected

1878 HUSBAND, WALTER EDWARD, 56, Bury New Road, Manchester.

1859 HUTCHINSON, JONATHAN, F.R.C.S., F.R.S., Surgeon to the London Hospital; 15, Cavendish square, W. *Council*, 1869-71. *Vice-Pres.* 1881-3. *Trans.* 1.

1882 HUTTON, ROBERT JAMES, L.R.C.P. Ed., Stapleton House, Stapleton Hall road, Crouch hill, N.

1877 ILOTT, JAMES JOHN, L.R.C.P. Ed., Resident Medical Officer, Whitechapel Union Infirmary, Baker's row, E.

1879 INKSON, JAMES, M.D., Surgeon-Major, Army Medical Department.

1883 INMAN, ROBERT EDWARD, 243, Hackney road, E.

1864 JACKSON, EDWARD, M.B., 81, Osborne Road, Jesmond, Newcastle-on-Tyne.

1883 JACKSON, GEORGE HENRY, Lansdowne House, Tottenham.

1864 JACKSON, ROBERT, M.D., 53, Notting hill square, W.

1883 JAKINS, PERCY S., 9, Osnaburgh street, Regent's park, N.

1873 JAKINS, WILLIAM VOSPER, L.R.C.P. Ed., Sturt street, Ballarat, Victoria. [Per Isaac N. Jakins, Esq., 32, Osnaburgh street, Regent's park.]

1872 JALLAND, ROBERT, Horncastle, Lincolnshire. *Trans.* 1.

1878 JAMES, WALTER CULVER, M.D., M.C., 11, Marloes road, Kensington, W.

1877 JAMIESON, PATRICK, M.A., 3, St. Peter's street, Peterhead, Aberdeenshire.

1881 JEFFCOAT, JAMES HENRY, Surgeon Major, Army Medical Department, 6, Upper Nile terrace, Rochester. *Hon. Loc. Sec.*

1883* JENKINS, EDWARD JOHNSTONE, M.B. Oxon., Australian Club, Sydney (per H. K. LEWIS, 136, Gower street, W. C.).

1877 JENKS, EDWARD W., M.D., 170, State street, Chicago, Illinois, U.S.

1882 JENNINGS, CHARLES EGERTON, L.R.C.P. Lond., 6, Percy gardens, Tynemouth.

Elected

1883 JOHNSON, ARTHUR JUKES, M.B., 1, Yorkville avenue, Toronto, Ontario, Canada.

1877 JOHNSON, SAMUEL, M.D., 5, Hill street, Stoke-upon-Trent.

1881 JOHNSTON, JOSEPH, M.D., Brigade Surgeon, Army Medical Department; St. John's Wood Barracks, N.W.

1879 JOHNSTON, WM. BEECH, M.D., 157, Jamaica road, Bermondsey, S.E.

1868 JONES, EVAN, Ty-Mawr, Aberdare, Glamorganshire. *Hon. Loc. Sec.*

1878 JONES, H. MACNAUGHTON, M.D., F.R.C.S.I. and Edin., Examiner in Obstetrics, Royal University of Ireland; Professor of Obstetrics, Queen's College, Cork; 141, Harley street, Cavendish square, W.

1881 JONES, JAMES ROBERT, M.B., Box, 320, Winnipeg, Manitoba, Canada.

1868 JONES, JOHN, 60, King street, Regent street, W.

1874 JONES, JOHN THOMAS, L.K.Q.C.P. I., 179, Brixton road, S.W.

1876 JONES, LESLIE, M.D., C.M., 3, Brighton parade, Blackpool.

1883 JONES, MONTAGU HANDFIELD, M.R.C.P. Lond., 24, Montagu square, W.

1873 JONES, PHILIP W., Silver street, Enfield.

1873 JONES, THOMAS DERRY, L.R.C.P. Ed., 328, Upper street, Islington, N.

1883 JONES, W. H. FENTON, 28, Duke street, Manchester square W.

1879 JOUBERT, CHARLES HENRY, M.D., Darjeeling, Bengal; [care of Messrs. Gray and Co., 21, Canning street, Calcutta].

1878 JUDSON, THOMAS ROBERT, L.R.C.P. Lond., Hayman's Green, West Derby, Liverpool.

1875 JUKES, AUGUSTUS, M.B., N. W. Mounted Police, Regina, N. W. Territory, Canada.

1878 KANE, NATHANIEL H. K., M.D., Lanherne, Kingston hill, Surrey.

1880 KEBBELL, ALFRED, Flaxton, York.

Elected

O.F. KEELE, GEORGE THOMAS, 81, St. Paul's road, Highbury, N.

1880 KEELING, JAMES HURD, M.D., 267, Glossop road, Sheffield. *Hon. Loc. Sec.*

1874 KEMPSTER, WILLIAM HENRY, L.R.C.P. Ed., Oak House, Bridge road, Battersea.

1879 KER, HUGH RICHARD, L.R.C.P. Ed., Comberton House, Hales-Owen, Birmingham.

1865* KERNOT, GEORGE CHARLES, M.D., 5, Elphinstone road, Hastings, Sussex.

1883 KERR, J. KING, M.D., Leytonstone, E.

1872 KERR, NORMAN S., M.D., F.L.S., 42, Grove road, Regent's park, N.W.

1877* KERSWILL, JOHN BEDFORD, M.R.C.P. Ed., Fairfield, St. German's, Cornwall.

1878 KHORY, RUSTONJEE NASERWANJEE, M.D. Brussels, L.Med. Bombay, Physician to the Parell Dispensary, Bombay, Lecturer to Native Midwives, Grant Medical College, Bombay; Girgaum road, Bombay.

O.F. KIALLMARK, HENRY WALTER, 5, Pembridge gardens, Bayswater. *Council*, 1879-80.

1860 KINGSFORD, EDWARD, F.R.C.S., Surgeon to the Sunbury Dispensary; Sunbury-on-Thames.

1862 KIRKPATRICK, JOHN RUTHERFORD, M.D. Dubl., King's Professor of Midwifery, Dublin University; 4, Upper Merrion street, Dublin. *Council*, 1872-4.

1872* KISCH, ALBERT, 3, Sutherland gardens, Maida vale, W.

1867 KNAGGS, HENRY GUARD, M.D., 189, Camden road, N.W.

1876 KNOTT, CHARLES, M.R.C.P. Ed., Liz Ville, Elm grove, Southsea.

1881 LACY, CHARLES SETHWARD DE LACY, M.B., 31, Grosvenor street, W.

1876 LANCHESTER, HENRY THOMAS, M.D., Park House, Park lane, Croydon, Surrey. *Council*, 1884.

1867 LANGFORD, CHARLES P., 29, Duncan terrace, Islington, N.

1883 LANGLEY, AARON, L.R.C.P. Ed., 149, Walworth road, S.E.

Elected

O.F. LANGMORE, JOHN CHARLES, M.B., F.R.C.S., 20, Oxford terrace, Hyde park, W. *Council*, 1861-64. *Vice-Pres.* 1869-71.

1872 LATTEY, JAMES, 23, St. Mary Abbott's terrace, Kensington, W.

1875 LAWRENCE, ALFRED EDWARD AUST, M.D., Physician-Accoucheur to the Bristol General Hospital; 15, Richmond hill, Clifton, Bristol.

1878 LEACHMAN, ALBERT WARREN, M.D., Fairley, Petersfield, Hants.

1882 LEE, FRANCIS BOYNTON, F.R.C.P. Ed., The Elms, Heckmondwike.

1860 LEISHMAN, WILLIAM, M.D., Physician to the University Lying-in Hospital, Regius Professor of Midwifery in the University of Glasgow; 11, Woodside crescent, Glasgow. *Council*, 1866-68. *Vice-Pres.* 1869-70. *Trans.* 1.

1882 LEONARD, HENRY JAMES, M.B., 279, Camden road, N.W.

1881 LE PAGE, JOHN FISHER, L.R.C.P. Ed., 17, The Crescent, Salford, Manchester.

1877 LEWIS, JOHN RIGGS MILLER, M.D., Deputy-Surgeon General, Woodlands, Queen's road, Norbiton, S.W.

1875 LIEBMAN, CARLO, M.D. Vienna, Principal Surgeon, Trieste Civil Hospital, Trieste, Austria. *Trans.* 1.

1876 LILLEY, GEORGE HERBERT, M.D., M.R.C.P., Medical Officer H.M.'s Convict Prison, Portland, Dorset.

1873 LINDSAY, W. B., M.D., Strathroy, Ontario, Canada.

1874 LITHGOW, ROBERT ALEXANDER DOUGLAS, M.R.C.P. Ed., 1, Walton place, Hans place, S.W.

1868 LLEWELLYN, EVAN, L.R.C.P. Ed., 9, Mount place, London Hospital, E.

1872* LOCK, JOHN GRIFFITH, M.A., Lansdowne House, Tenby.

1859 LOMBE, THOMAS ROBERT, M.D., Bemerton, Torquay.

1870 LONG, MARK, M.D., Ludlow, Salop.

1878 LORIMER, JOHN ARCHIBALD, 33, Castle street, Farnham.

Elected

1876 LOVETT, HENRY ALBERT, Swansea, Tasmania. [Per S. W. Lovett, St. Stephen's street, Norwich.]

1862 LOWE, GEORGE, F.R.C.S., 5, Horninglow street, Burton-on-Trent, Staffordshire. *Trans.* 1.

1866 LUCEY, WILLIAM CUBITT, M.D., The Elms, Bushhill Park Enfield.

1873 LUSH, WILLIAM JOHN HENRY, F.R.C.P.Ed., Associate of King's College, London; Fyfield House, Andover.

1878* LYCETT, JOHN ALLAN, M.D., The "Hollies," Graiseley, Wolverhampton.

1869 LYDALL, WYKEHAM H., L.R.C.P. Ed., 19, Mecklenburgh square, W.C.

1871 MCCALLUM, DUNCAN CAMPBELL, M.D., Professor of Midwifery and Diseases of Women and Children, McGill University; Physician to the University Lying-in Hospital; and Physician to the Montreal General Hospital; 45, Union avenue, Montreal, Canada. *Trans.* 4.

1879 MACKEOUGH, GEORGE J., M.D., Chatham, Ontario, Canada.

O.F. MACKINDER, DRAPER, M.D., Consulting-Surgeon to the Gainsborough Dispensary; Gainsborough, Lincolnshire. *Council*, 1871-3. *Trans.* 2.

1879 MACLAURIN, HENRY NORMAND, M.D., 155, Macquarie street, Sydney, New South Wales.

1879 MACNEILAGE, DAVID, L.R.C.P. Ed.

1879 MACSWINNEY, GEORGE HENRY, M.D., Westall House, Brook green, Hammersmith.

1859 MADGE, HENRY M., M.D., 4, Upper Wimpole street, W. *Council*, 1863-65, 1884. *Vice-Pres.* 1872-4. *Trans.* 15.

1871 MALINS, EDWARD, M.D., Obstetric Physician to the General Hospital, Birmingham; 8, Old square, Birmingham. *Council*, 1881-3. *Vice-Pres.* 1884.

1876 MANBY, FREDERICK EDWARD, 10, King street, Wolverhampton.

Elected

1876 MANDERS, HORACE, Agincourt House, York town, Farnborough Station.

1868 MARCH, HENRY COLLEY, M.D., 2, West street, Rochdale.

1860 MARLEY, HENRY FREDERICK, Padstow, Cornwall.

1862 MARRIOTT, ROBERT BUCHANAN, Swaffham, Norfolk.

1876 MARSHALL, FRANCIS JOHN, Resident Medical Officer to St. George's Hospital.

1873 MARTIN, HENRY CHARRINGTON, M.B., C.M., 11, Somers place, Hyde park, W.

1875 MASON, JOHN WALLIS, 1, Osnaburgh terrace, Regent's park, W.

1877 MASON, SAMUEL BUTLER, L.R.C.P. Ed., Denham House Pontypool, Monmouthshire.

1877 MAUNSELL, H. WIDENHAM, A.M., M.D., Pitt and London street, Dunedin, New Zealand.

1883 MAURICE, OLIVER CALLEY, 75, London street, Reading.

1877 MAY, LEWIS JAMES, Bountis Thorne, Seven Sisters road, Finsbury Park, N.

O.F. MEADOWS, ALFRED, M.D., Physician-Accoucheur to, and Lecturer on Midwifery at, St. Mary's Hospital; 27, George street, Hanover square, W. *Council*, 1862-64. *Hon. Sec.* 1865-66. *Hon. Lib.* 1865. *Treas.* 1867-69, *Vice-Pres.* 1874-6. *Trans.* 18.

1882 MEREDITH, WILLIAM APPLETON, M.B., C.M., 6, Queen Anne street, Cavendish square, W.

1883 MIDDLEMIST, ROBERT PERCY, L.R.C.P. Lond., 10, Bedford place, Russell square, W.C.

1875 *MILES, ABIJAH J., M.D., Professor of Diseases of Women and Children in the Cincinnati College of Medicine, Cincinnati, Ohio, U.S.

1871 MILLER, HUGH, M.D., Physician-Accoucheur to the Glasgow Maternity Hospital; 298, Bath crescent, Bath street, Glasgow.

1876 MILLMAN, THOMAS, M.D., Asylum for the Insane, London, Ontario, Canada.

Elected

1880 MILLS, ROBERT JAMES, M.B., M.C., All Saints' Green, Norwich.

1876 MILSON, RICHARD HENRY, M.D., 88, Finchley road, South Hampstead, N.W.

1869 MILWARD, JAMES, 27, Charles Street, Cardiff. *Trans.* 1.

1869 MINNS, PEMBROKE R. J. B., M.D., Thetford, Norfolk.

1867 MITCHELL, ROBERT NATHAL, M.D., Chester House, Wickham road, Lewisham High road, S.E.

1868 MOOTHOOSAWMY MOODELLY, P. S., M.D., F.L.S., Native Surgeon, Uncovenanted Service, and Teacher of Midwifery, L. F. Midwifery, Manargoodi, Tanjore District, Madras Presidency. *Trans.* 1.

1877 MOON, FREDERICK, M.B., Bexley house, Greenwich.

1873 MOON, ROBERT HENRY, F.R.C.S., Fern Lodge, Lower Norwood.

1859 MOORHEAD, JOHN, M.D., Surgeon to the Weymouth Infirmary and Dispensary; Weymouth, Dorset.

1883 MORRIS, CLARKE KELLY, Upper Welland terrace, Spalding.

1879 MOULLIN, JAMES A. MANSELL, M.A., M.B., 69, Wimpole street, Cavendish square, W. *Trans.* 1.

1878 MOWAT, GEORGE, St. Albans. *Trans.* 1.

1878 MUIR, JAMES C. P., L.R.C.P. Ed., 44, Cornwall road, Westbourne park.

1877 MURPHY, JAMES, M.D., Surgeon to the Hospital for Women and Children, Sunderland, and Lecturer on Botany in the University of Durham College of Medicine at Newcastle-upon-Tyne; Holly House, Sunderland. *Hon. Loc. Sec.*

O.F. MURRAY, GUSTAVUS CHARLES P., M.D., Obstetric Physician to the Great Northern Hospital; 66, Great Cumberland place, Hyde park, W. *Council*, 1864-65. 1883-4. *Hon. Sec.* 1866-69. *Vice-Pres.* 1870-72. *Treas.* 1873-77. *Trans.* 3.

O.F. MUSGRAVE, JOHNSON THOMAS, L.R.C.P. Ed., Irlam villa, 39, Finchley road, N.W. *Council*, 1859-60. *Trans.* 1.

Elected

1863 NASON, JOHN JAMES, M.B. Lond., 11, Bridge street, Stratford-on-Avon.

1859 NEAL, JAMES, M.D., late Hon. Surgeon to the Lying-in Hospital, Birmingham; Barcelona House, Sandown, Isle of Wight.

1876 NESBITT, DAWSON, M.D., 34, Cambridge place, Hyde Park, W.

1882 NESHAM, THOMAS CARGILL, M.D., Lecturer in Midwifery in the University of Durham College of Medicine at Newcastle-on-Tyne; 43, Northumberland street, Newcastle-on-Tyne.

1881 NETHERCLIFT, WILLIAM HENRY, Resident Medical Superintendent, Chelsea Infirmary, Cale street, S.W.

1876 NEWHAM, JAMES, 16, Princes street, Cavendish square, W.

1859 NEWMAN, WILLIAM, M.D., Surgeon to the Stamford and Rutland Infirmary; Barn Hill House, Stamford, Lincolnshire. *Council*, 1873-75. *Vice-Pres.* 1876-77 *Trans.* 4.

1883 NEWSHOLME, ARTHUR, M.D., 39, High street, Clapham, S.W.

1873 NICHOLSON, ARTHUR, M.B. Lond., 98, Montpellier road, Brighton.

1879 NICHOLSON, EMILIUS ROWLEY, M.D., 89, Camden road, N.W.

1876 NIX, EDWARD JAMES, M.D., 143, Great Portland street, W.

1882 NORMAN, JOHN EDWARD, Lismore House, Hebburn-on-Tyne.

1883 NUNN, PHILIP W. G., L.R.C.P. Lond., Christchurch road, Bournemouth.

1880 OAKLEY, JOHN, Holly House, Wood's End, Halifax, Yorkshire.

1868 OATES, PARKINSON, M.D., 164, Cambridge street, Eccleston square, S.W.

1876 OGSTON, FRANCIS, Junr., M.D., 156, Union street, Aberdeen.

O.F. OLDHAM, HENRY, M.D., F.R.C.P., Consulting Obstetric Physician to Guy's Hospital; 4, Cavendish place, Cavendish square, W. *Vice-Pres.* 1859. *Council*, 1860, 1865-66. *Treas.* 1861-62. *Pres.* 1863-64. *Trans.* 1. *Trustee.*

1869 ORD, GEORGE RICE, Streatham hill, Surrey. *Council* 1881.

Elected

1880 Orton, Charles, M.R.C.P. Ed., Nelson place, Newcastle-under-Lyme, Staffordshire.

1877 Osterloh, Paul Rudolph, M.D. Leipzic; Dresden.

1877 Ostlere, Robert, M.B., C.M., 47, Stoke Newington road, N.

1863 Oswald, James Waddell Jeffries, M.D., 245, Kennington road, S.E. *Trans.* 4.

1880 Outhwaite, William, Hebert House, Denmark Hill, S.E.

1883 Palmer, John Irwin, Canbury House, Kingston-on-Thames.

1877 Palmer, Montagu H. C., London road, Newbury, Berks.

1877 Paramore, Richard, 18, Hunter street, Brunswick square, W.C.

1882 Parkes, Louis, M.D., 51, Cadogan square, S.W.

1867 Parks, John, The Wylde, Bury, Lancashire.

1873 Parks, Luther, A.M., M.D., 1, Place Duplaa, Pau, France. [Agents: Messrs. Baring Brothers & Co., 8, Bishopsgate street within, E.C.]

1872 Parr, George, M.D., 18, Upper Phillimore place, Kensington, W.

1880 Parsons, Sidney, 78, Kensington park road, W.

1865* Paterson, James, M.D., Hayburn Bank, Partick, Glasgow.

1879 Pauli, Theophilus William, L.R.C.P. Ed., Luton, Beds.

1874 Payne, William S. Hele, 54, Queen's Road, Peckham, S.E.

1882 Peacey, William, M.B., 214, Lewisham high road, S.E.

1864 Pearson, David Ritchie, M.D., 23, Upper Phillimore place, Kensington, W.

1871 Pedler, George Henry, 6, Trevor terrace, Rutland gate, S.W.

1880 Pedley, Thomas Franklin, Rangoon, India.

1880 Peel, Robert, 114, Collins street east, Melbourne, Victoria.

1881 Penny, George Town, B.A., Stanley House, Oakfield road, Upper Tollington Park, N.

1881 Perigal, Arthur, M.D., New Barnet, Herts.

Elected

1871 PERRIGO, JAMES, M.D., 163, Bleury street, Montreal, Canada. *Hon. Loc. Sec.*

1879* PESIKAKA, HORMASJI DOSABHAI, 23, Hornby row, Bombay.

1873 PETTIFER, EDMUND HENRY, 29, Stoke Newington green, N.

1879 PHIBBS, ROBERT FEATHERSTONE, L.R.C.P. Ed., Pelham House, 30, Sutherland gardens, Maida vale, W.

1879 PHILLIPS, GEORGE RICHARD TURNER, 24, Leinster square, Bayswater, W.

1882 PHILLIPS, JOHN, B.A., M.B., Physician to Out-patients, British Lying-in Hospital; Assistant Physician, Chelsea Hospital for Women; 14, Orchard street, Portman square, W.

1878 PHILPOT, JOSEPH HENRY, M.D., 26, South Eaton place, S.W.

1871 PHILPS, PHILIP GEORGE, 4, Queen's road, Peckham, S.E.

1876 PICARD, P. KIRKPATRICK, M.D., 59, Abbey road, St. John's Wood, N.W.

1874 PIGG, THOMAS, M.D., Physician to the Manchester Southern Hospital for Women and Children; 98, Mosley street, Manchester.

1866 PILCHER, WILLIAM JOHN, 43, High street, Boston, Lincolnshire.

1864 PLAYFAIR, W. S., M.D., F.R.C.P., Physician Accoucheur to H.I. & R.H. the Duchess of Edinburgh; Professor of Obstetric Medicine in King's College, and Obstetric Physician to King's College Hospital; 31, George street, Hanover Square, W. *Council*, 1867. 1883-4. *Hon. Librarian*, 1868-9. *Hon. Sec.* 1870-72. *Vice-Pres.*, 1873-5. *Pres.* 1879-80. *Trans.* 13.

1880 POCOCK, FREDERICK ERNEST, M.D., The Limes, St. Mark's road, Notting hill, W.

1883 POCOCK, WALTER, Broadlands, Effra road, Brixton, S.W.

O.F.* POLLARD, WILLIAM, Surgeon to the Torbay Hospital; Southlands, Torquay, Devon.

1883 POOK, WILLIAM JOHN, L.R.C.P., 44, Canonbury square, N.

1877 POOLE, S. WORDSWORTH, M.D., Dunedin, Sidcup, Kent. *Trans.* 1.

Elected

1876 POPE, H. CAMPBELL, M.D., F.R.C.S., Broomsgrove Villa, 280, Goldhawk road, Shepherd's Bush, W.

1882 PORTER, JOSEPH FRANCIS, M.D., 1, Bow road, E.

1864 POTTER, JOHN BAPTISTE, M.D., Obstetric Physician to, and Lecturer on Midwifery and the Diseases of Women at, the Westminster Hospital; 20, George street, Hanover square, W. *Council*, 1872-6. *Hon. Lib.* 1877-8. *Vice-Pres.* 1879-81. *Treas.* 1882-4. *Trans.* 1.

1875 POWDRELL, JOHN, 160, Euston road, N.W.

1863 POWELL, JOSIAH T., M.D., 347, City road, E.C.

1864 PRICE, WILLIAM NICHOLSON, Lecturer on Midwifery and the Diseases of Women and Children at the Leeds School of Medicine; Mount Pleasant, Leeds. *Council*, 1876-8.

1880 PRICKETT, MARMADUKE, M.D., 12, Devonport street, Gloucester square, W.

O.F. PRIESTLEY, WILLIAM O., M.D., F.R.C.P., Consulting Obstetric Physician to King's College Hospital; and Consulting Physician-Accoucheur to the St. Marylebone Infirmary; 17, Hertford street, Mayfair, W. *Council*, 1859-61, 1865-66. *Vice-Pres.* 1867-69. *Pres.* 1875-76. *Trans.* 5.

1876 QUIRKE, JOSEPH, L.R.C.P. Ed., The Oaklands, Hunter's lane, Handsworth, Birmingham.

O.F. RANDALL, JOHN, M.D., Lecturer on Medical Jurisprudence, St. Mary's Hospital Medical School; Medical Officer, St. Marylebone Infirmary; 35, Nottingham place, W. *Council*, 1877.

1861 RASCH, ADOLPHUS A. F., M.D., Physician for Diseases of Women to the German Hospital; Physician to the Training Hospital, Tottenham; 7, South street, Finsbury square, E.C. *Council*, 1871-3. *Trans.* 5.

1878 RAWLINGS, JOHN ADAMS, M.R.C.P. Ed., 4, Northampton terrace, Swansea.

1870 RAY, EDWARD REYNOLDS, Dulwich, Kent, S.E.

1860* RAYNER, JOHN, M.D., Swaledale House, Quadrant road north, Highbury New Park, N.

Elected

1879 READ, THOMAS LAURENCE, 11, Petersham terrace, Queen's gate, S.W.

1874 REES, WILLIAM, Priory House, 129, Queen's crescent, Haverstock hill, N.W.

1879 REEVE, HENRY, 286, Mile End road, and 24, White Horse lane, E.

1879 REID, WILLIAM LOUDON, M.D., 7, Royal crescent, Glasgow.

1875* REY, EUGENIO, M.D., 39, Via Cavour, Turin.

1883 REYNOLDS, JAMES J., L.R.C.P. Lond., Boxford, Suffolk.

1862 RICHARDS, DAVID, Llangeitho, Cardiganshire. *Trans.* 1.

1862 RICHARDS, S. SMITH C., 36, Bedford square, W.C.

1883 RICHARDSON, ADOLPHUS J., M.B. Cantab., M.R.C.P. Lond., London Hospital, E.

O.F. RICHARDSON, RICHARD, L.R.C.P. Ed., Bryngwy, Rhayader, Radnorshire.

1872 RICHARDSON, WILLIAM L., M.D., A.M., Assistant Professor of Obstetrics in Harvard University; Visiting Physician to the Massachusetts General Hospital and to the Boston Lying-in Hospital; 76, Boylston street, Boston, Massachusetts, U.S.

1872 RIGDEN, GEORGE, Surgeon to the Canterbury Dispensary; 60, Burgate street, Canterbury. *Trans.* 1.

1871 RIGDEN, WALTER, 231, Brompton road, S.W. *Council*, 1882-3. *Trans.* 1.

O.F.* ROBERTS, DAVID LLOYD, M.D., F.R.S.E., F.R.C.P., Physician to St. Mary's Hospital, Manchester; 11, St. John's street, Deansgate, Manchester. *Council*, 1868-70, 1880-2. *Vice-Pres.* 1871-2. *Trans.* 5. *Hon. Loc. Sec.*

1867 ROBERTS, DAVID W., M.D., 56, Manchester street, Manchester square, W.

1883 ROBERTS, JOHN CORYTON, L.R.C.P. Ed., Avenue House, Peckham Rye, S.E.

1874 ROBERTSON, WILLIAM BORWICK, M.D., West Dulwich, S.E.

O.F. ROBINSON, THOMAS, M.D., 5, Woburn square, W.C.

1876 ROE, JOHN WITHINGTON, M.D., Ellesmere, Salop.

Elected

O.F. ROGERS, WILLIAM RICHARD, M.D., Physician to the Samaritan Free Hospital for Women and Children; Consulting Physician to the Hospital for Women, Vincent square, S.W.; 56, Berners street, Oxford street, W. *Council*, 1870-72. *Trans.* 4.

1874 ROOTS, WILLIAM HENRY, Canbury House, Kingston-on-Thames.

1874 ROPER, ARTHUR, 17, Granville park, Blackheath.

1865 ROPER, GEORGE, M.D., Physician to the Royal Maternity Charity; Physician to the Royal Hospital for Diseases of Children and Women, Waterloo Bridge road; 19, Ovington gardens, S.W. *Council*, 1875-77. 1883-4. *Vice-Pres.* 1879-81. *Trans.* 10.

1859 ROSE, HENRY COOPER, M.D., Rosslyn hill, Hampstead, N.W. *Council*, 1875-77. *Trans.* 4.

1880 ROSS, DAVID PALMER, M.D., Kingston, Jamaica.

1883 ROSSER, WALTER, M.D., 1, Wellesley villas, Croydon.

1882 ROUTH, AMAND J. McC., M.D., B.S., Assistant Obstetric Physician, Charing Cross Hospital; Physician to the Samaritan Free Hospital; 6, Upper Montagu street, W.

O.F. ROUTH, CHARLES HENRY FELIX, M.D., Physician to the Samaritan Free Hospital for Women and Children; 52, Montagu square, W. *Council*, 1859-61. *Vice-Pres.* 1874-6. *Trans.* 13.

1881 ROWORTH, ALFRED THOMAS, Gray's, Essex.

1882 RUSSELL, FRANCIS J. R., L.K.Q.C.P., 48, Lupus street, S.W.

1870 RUSSELL, LOGAN D. H., M.D., 6, Alfred street, Gt. George street, Liverpool.

1866 SABOIA, V., M.D., Rio de Janeiro, South America. *Trans.* 2.

1883 SALTER, FRANCIS JOSEPH, L.R.C.P. Ed., 9, Lyddon terrace, Leeds.

1864 SALTER, JOHN H., D'Arcy House, Tolleshunt D'Arcy, Kelvedon, Essex.

1875 SALZMANN, FREDERICK WILLIAM; Senior Surgeon to the Hospital for Women; 18, Montpellier road, Brighton. *Council*, 1880-2. *Hon. Loc. Sec.*

Elected

1868* SAMS, JOHN SUTTON, St. Peter's Lodge, Eltham road, Lee, Kent.

1883 SANDEL, ANUNDO LALL, M.B., 89, South Colinga street, Calcutta.

1872 SANGSTER, CHARLES, 148, Lambeth road, S.E.

1870 SAUL, WILLIAM, M.D., 4, Charlotte street, Fitzroy square, W.

1872 SAVAGE, THOMAS, M.D., Surgeon to the Birmingham and Midland Hospital for Women; 12, Old square, Birmingham. *Council*, 1878-80. *Hon. Loc. Sec.*

1877 SAVORY, CHARLES TOZER, M.D., 1, Douglas road, Canonbury, N. *Trans.* 1.

O.F. SCOTT, JOHN, F.R.C.S., 10, Tavistock square, W.C. *Council*, 1868-70. *Vice-Pres.* 1871-3. *Trans.* 1.

1870 SCOTT, JOHN, M.D., New street, Sandwich.

1866 SEQUEIRA, JAMES SCOTT, 68, Leman street, Goodman's fields, E., and Crescent House, Cassland Crescent, Cassland road, South Hackney.

1882 SERJEANT, DAVID MAURICE, M.D., 1, The Terrace, Camberwell, S.E.

1875 SETON, DAVID ELPHINSTONE, M.D., 12, Thurloe place, South Kensington. *Council*, 1884.

1860 SEWELL, CHARLES BRODIE, M.D., 21, Cavendish square, W., and 13, Fenchurch street, E.C. *Council*, 1880-2.

1862 SHARMAN, MALIM, Surgeon to the Birmingham Free Hospital for Sick Children; 18, New Hall street, and Hollington, Bristol road, Birmingham.

O.F. SHARPIN, HENRY WILSON, F.R.C.S., Surgeon to the Bedford General Infirmary, Bedford. *Council*, 1871-3. *Trans.* 1.

1882 SHEARD, WILLIAM FRANCIS, L.R.C.P. Ed., Clyde House, Putney, S.W.

1867 SHEPHERD, FREDERICK, L.R.C.P. Ed., 33, King Henry's road, Primrose hill, N.W.

1859 SHIPTON, WILLIAM PARKER, Consulting Surgeon to the Devonshire Hospital; Buxton, Derbyshire.

Elected

1874 SINCLAIR, ALEXANDER DOULL, M.D., Visiting Physician to the Boston Lying-in Hospital; Member of the Board of Consulting Physicians and Surgeons, Boston City Hospital; 35, Newbury street, Boston, Massachusetts, U.S.

1876 SIRIGNANO, GIOSUE, M.D., 24, Strada Banchi Nuovi, Napoli.

874 SKINNER, STEPHEN, M.B., Ferndale, Clevedon, Somerset.

1879 SLIGHT, GEORGE, M.D., 3, Clifford street, Bond street, W.

1881 SLOAN, ARCHIBALD, M.B., 56, Buccleugh street, Glasgow.

1876 SLOAN, SAMUEL, M.D., C.M., 1, Newton terrace, Glasgow.

1861 SLYMAN, WILLIAM DANIEL, 26, Caversham road, Kentish Town, N.W. *Council*, 1881.

1867 SMITH, HEYWOOD, M.D., Physician to the Hospital for Women, Soho square, and Physician to the British Lying-in Hospital; 18, Harley street, Cavendish square, W. *Council*, 1872-5. *Trans.* 6.

O.F. SMITH, PROTHEROE, M.D., Physician to the Hospital for Women, Soho square; 42, Park street, Grosvenor square, W. *Trans.* 2.

1875 SMITH, RICHARD THOMAS, M.D., Assistant-Physician to the Hospital for Women, Soho square; 53, Haverstock hill, N.W.

1882 SMITH, STEPHEN MABERLY, L.R.C.P. Ed., Geelong, Melbourne. [Per Henry M. Smith, 34, Southampton street, Covent Garden, W.C.]

1879 SMITH, WM. HUGH MONTGOMERY, L.R.C.P. Ed., 24, London road, West Croydon, Surrey.

1859 SMITH, WILLIAM JOHNSON, M.D., Consulting Physician to the Weymouth Infirmary and Dispensary; Greenhill, Weymouth, Dorset. *Council*, 1869-71.

1876 SNELL, EDMUND GEORGE CARRUTHERS, 102, Bonner road, Victoria park, E.

1882 SNELL, GEORGE, L.R.C.P. Ed., The Asylum, Berbice, B. Guiana.

Elected

1868 SPAULL, BARNARD E., Lynwood House, 47, Hammersmith road.

1876 SPENCER, LIONEL DIXON, M.D., Bengal Army [care of Messrs. Grindlay and Co., 55, Parliament street].

1882 SPOONER, FREDERICK HENRY, M.D., L.R.C.P. Lond., Howard House, Lower Clapton, E.

1862 SPRY, G. FREDERICK HUME, M.D., Surgeon-Major 2nd Life Guards, Army and Navy Club, S.W.

1876 SPURGIN, HERBERT BRANWHITE, 49, Abington road Northampton.

1876 SPURRELL, FLAXMAN, L.R.C.P. Ed., Belvedere, Kent.

O.F. SQUIRE, WILLIAM, M.D., M.R.C.P., 6, Orchard street, Portman square, W. *Council*, 1866-68. *Vice-Pres.* 1876-77. *Trans.* 3.

1877 STEPHENSON, WILLIAM, M.D., Professor of Midwifery, University of Aberdeen; 261, Union Street, Aberdeen. *Council*, 1881-3. *Trans.* 1.

1873 STEWART, JAMES, M.D., 2, Skinner street, Whitby, Yorkshire.

1875* STEWART, WILLIAM, L.R.C.P. Ed., Highfield House, Barnsley, Yorkshire.

1876 STEWART, WILLIAM EDWARD, F.R.C.S. Ed., 16, Harley Street, W.

1879 STILWELL, ROBERT R., M.D., Beckenham, Kent.

1863 STOCKS, FREDERICK, 421, Wandsworth road, S.W.

1859 STONE, JOSEPH, M.D., 175, Upper Brook street, Manchester.

O.F. STOWERS, NOWELL, 125, Kennington park road, Kennington, S.E.

1866 STRANGE, WILLIAM HEATH, M.D., 2, Belsize avenue, Belsize park, N.W. *Council*, 1882-4.

1871 STURGES, MONTAGUE J., M.D., The Limes, Beckenham, Kent.

1880 SUTHERLAND, CHARLES JAMES, L.R.C.P. Ed., 16, Frederick street, South Shields, Durham.

1883* SUTHERLAND, HENRY, M.A., M.D. Oxon., M.R.C.P., 6, Richmond terrace, Whitehall, S.W.

Elected

1862 SUTTON, FIELD FLOWERS, M.D., Balham hill, Clapham, S.W.

1859 SWAYNE, JOSEPH GRIFFITHS, M.D., Physician-Accoucheur to the Bristol General Hospital; Harewood House, 74, Pembroke road, Clifton, Bristol. *Council*, 1860-61, *Vice-Pres.* 1862-64. *Trans.* 7. *Hon. Loc. Sec.*

1883 TAIT, EDWARD SABINE, M.B., 1, The Bank, Crouch hill, N.

1879 TAIT, EDWARD W., 54, Highbury park, N.

1871 TAIT, LAWSON, F.R.C.S., Surgeon to the Birmingham and Midland Hospital for Women; Consulting Surgeon to the West Bromwich Hospital; 7, Great Charles street, Birmingham. *Trans.* 12.

1880 TAKAKI, KANAHEIRO, F.R.C.S., 10, Nishi-Konyachō, Kiō-bashika, Tokio, Japan. *Hon. Loc. Sec.*

1871 TANNER, JOHN, M.D., F.L.S., Physician for Diseases of Women, to the Farringdon General Dispensary, and Obstetric Physician to the Lying-in Charity, Holborn; 102, Harley street, Cavendish square, W.

1859 TAPSON, ALFRED JOSEPH, M.B. Lond., 36, Gloucester gardens, Westbourne terrace, W. *Council*, 1862-64.

1863 TAPSON, JOSEPH ALFRED, Surgeon to the Clapham General Dispensary; 83, High street, Clapham, S.W. *Trans.* 1.

1871 TAYLER, FRANCIS T., B.A. Lond., and M.B., Claremont villa, 224, Lewisham high road, S.E.

O.F. TAYLOE, EDWARD, South lodge, Clapham common, S.W. *Council*, 1882.

O.F. TAYLOR, CHARLES, M.D., Pine house, 216, Camberwell New road, S.E. *Council*, 1869-71.

1881 TAYLOR, F. PERLEY, F.R.C.S. Ed., Charlotte Town, Prince Edward Island, Canada.

1869 TAYLOR, JOHN, Earl's Colne, Halstead, Essex.

1871 TAYLOR, JOHN W., M.D., Rothsay House, Prince of Wales terrace, Scarborough.

Elected

1872 TEMPLE, JAMES ALGERNON, M.D., Professor of Obstetrics, Trinity College; Physician to Toronto General Hospital; Physician Accoucheur to the Burnside Lying-in-Hospital; 191, Simcoe street, Toronto. *Hon. Loc. Sec.*

1862 THANE, GEORGE DANCER, M.D., 15, Montague street, Russell square, W.C. *Council*, 1881.

1882 THOMAS, HUGH, Cambridge House, Small-heath, Birmingham.

1860 THOMPSON, HENRY, L.R.C.P. Lond., Assistant Surgeon, Hull General Infirmary, 16, Albion street, Hull.

1867 THOMPSON, JOSEPH, L.R.C.P. Lond., 1, Oxford street, Nottingham. *Trans.* 1.

1878 THOMSON, DAVID, M.D., 17, Market hill, Luton, Bedfordshire.

1874 THOMSON, WILLIAM SINCLAIR, M.D., 40 Ladbroke grove, Kensington park gardens, W.

1878 THOMSON, WILLIAM ARNOLD, F.R.C.S.I., The Limes, Ampthill, Beds.

1867 THORBURN, JOHN, M.D., M.R.C.P., Professor of Obstetric Medicine, Owens College, Manchester; 62, King street, Manchester. *Council*, 1876-78. *Vice. Pres.* 1881-3.

1860 THORNE, GEORGE LEWORTHY, M.B., Lenham, near Maidstone, Kent.

1879 THORNTON, J. KNOWSLEY, M.B., C.M., Surgeon to the Samaritan Free Hospital for Women and Children, 22, Portman street, Portman square. *Council*, 1882-3. *Hon. Lib.* 1884. *Trans.* 5.

1867 THORNTON, WILLIAM HENRY, Surgeon to the Royal National Hospital for Scrofula; Berkeley Lodge, Margate.

1874 TICEHURST, AUGUSTUS ROWLAND, Silchester House, Pevensey road, St. Leonard's-on-Sea.

1873 TICEHURST, CHARLES SAGE, Petersfield, Hants.

1860 TIFFEN, ROBERT, M.D., Wigton, Cumberland.

1866 TILLEY, SAMUEL, The Cedars, Cranford, Middlesex.

Elected

O.F. TILT, EDWARD JOHN, M.D., Consulting Physician-Accoucheur to the Farringdon General Dispensary; 27, Seymour street, Portman square, W. *Council*, 1867-68. *Vice-Pres.* 1869-70. *Treas.* 1871-2. *Pres.* 1873-4. *Trans.* 7.

1883 TINKER, FREDERICK HOWARD, F.R.C.P. Ed., Brookland House, Hyde, Cheshire.

1879 TIVY, WILLIAM JAMES, F.R.C.S. Ed., 8, Lansdown place, Clifton, Bristol.

1872 TOLOTSCHINOFF, N., M.D., Kieff, Russia [*per* M. N. Orloff, 3, Bleisho road, Lavender hill, S.W.].

1869 TOMKINS, CHARLES P., L.K.Q.C.P.I., Beddington park, Croydon.

1870 TOWNE, ALEXANDER, 364, Kingsland road, N.E.

1873 TRESTRAIL, HENRY ERNEST, F.R.C.S., M.R.C.P. Ed., Walmer House, Victoria road, Aldershot. *Trans.* 1.

1872 TUCHMANN, MARO, M.D., Assistant Surgeon to the German Hospital; 148, Adelaide road, Haverstock hill, N.W.

1865 TURNER, JOHN SIDNEY, Surgeon to the Anerley Dispensary; Stanton House, Thicket road, Upper Norwood, Surrey.

1881 TUTHILL, PHINEAS BARRETT, M.D., Station Hospital, Gibraltar.

1861 TWEED, JOHN JAMES, Junr., F.R.C.S., 14, Upper Brook street, W.

1874 UNDERHILL, THOMAS, M.D., Summerfield, West Bromwich, Staffordshire.

1874 VENN, ALBERT JOHN, M.D., Obstetric Physician, Metropolitan Free Hospital; Assistant Physician, Victoria Hospital for Sick Children; 8, Upper Brook street, Grosvenor square, W.

1880 VERDON, WALTER, F.R.C.S., 410, Brixton road, S.W.

1873 VERLEY, REGINALD LOUIS, F.R.C.P. Ed., 28B, Devonshire street, Portland place, W.

1879 WADE, GEORGE HERBERT, Ivy Lodge, Chislehurst, Kent.

1864 WAHLTUCH, ADOLPHE, M.D., 8, Acomb street, Greenheys, Manchester.

Elected

1860 WALES, THOMAS GARNEYS, Downham Market, Norfolk.

1883 WALKER, ALEXANDER, M.D., Hotham House, Putney, S.W.

1877 WALKER, GEORGE, L.R.C.P., M.R.C.S., 12, Lingfield road, Wimbledon.

1866 WALKER, THOMAS JAMES, M.D., Surgeon to the General Infirmary, Peterborough; 18, Westgate, Peterborough. *Hon. Loc. Sec. Council*, 1878-80.

1873 WALKER, THOMAS OSBORNE, Crick, near Rugby, Northamptonshire.

1883 WALLACE, RICHARD UNTHANK, M.B., 186, Amhurst road, N.E.

1870 WALLACE, FREDERICK, 96, Cazenove road, Upper Clapton, N. *Council*, 1880-2.

1872 WALLACE, JOHN, M.D., Assistant-Physician to the Liverpool Lying-in Hospital; 1, Gambier terrace, Liverpool. *Hon. Loc. Sec. Council*, 1883-4.

1879* WALTER, WILLIAM, M.A., M.D., Surgeon to St. Mary's Hospital, and the Manchester and Salford Lying-in Hospital; 20, St. John street, Manchester.

1867 WALTERS, JAMES HOPKINS, Assistant Surgeon to the Royal Berkshire Hospital; 43, Castle street, Reading, Berks. *Council*, 1884.

1873 WALTERS, JOHN, M.B., Church street, Reigate, Surrey.

1859 WARDEN, CHARLES, M.D., Hon. Surgeon to the Birmingham Lying-in Hospital; 31, Newhall street, Birmingham.

1862 WATKINS, CHARLES STEWART, 16, King William street, Strand, W.C.

1879 WEATHERLY, LIONEL ALEX., M.D., C.M. Aberd., Portishead, Somersetshire.

1867 WEBB, FRED. E., 113, Maida vale, W.

O.F. WEBB, HENRY SPEAKMAN, Welwyn, Herts.

1872 WEBSTER, THOMAS, Malvern House, Redland, near Bristol.

1876 WEIR, ARCHIBALD, M.D., St. Mungho's, Great Malvern.

1867 WELLER, GEORGE, The Mall, Wanstead, Essex.

Elected

1876 WELLS, FRANK, M.D., late Professor of Obstetrics and the Diseases of Women and Children in the Cleveland Medical School; Chapel Station, Brookline, Massachusetts.

O.F. WELLS, SIR T. SPENCER, Bart., F.R.C.S., Surgeon in Ordinary to H.M.'s Household; Consulting Surgeon to the Samaritan Free Hospital for Women and Children; 3, Upper Grosvenor street, W. *Council*, 1859. *Vice-Pres.* 1868-70. *Trans.* 5. *Trustee.*

1859 WESTMACOTT, JOHN GUISE, M.D., Medical Officer to the Paddington Provident Dispensary; Howley House, 39, Howley place, Paddington, W. *Trans.* 1.

1876 WHARTON, HENRY THORNTON, M.A. Oxford, 39, St. George's road, Kilburn, N.W.

1870 WHEATCROFT, SAMUEL HANSON, L.R.C.P. Ed., Litcham, Swaffham, Norfolk.

1860 WHEELER, DANIEL, Chelmsford, Essex.

1873 WHITE, FREDERICK BROAD, 15, Maida vale, W.

1882 WHOLEY, THOMAS, L.R.C.P. Lond., London Hospital, E.

1883 WICKS, WILLIAM CAIRNS, M.B., 1, Park parade, Newcastle-on-Tyne.

1877 WIGMORE, WILLIAM, 130, Inverness terrace, Hyde park, W.

1867 WILDE, RICHARD HAYDOCK, M.D., York Lodge, 21, Finchley road, St. John's Wood, N.W.

1879 WILKIN, JOHN FREDERICK, M.D., Beckenham, Kent.

1883 WILKINSON, THOMAS MARSHALL, F.R.C.S. Ed., Lincoln.

1879 WILLANS, WILLIAM BLUNDELL, F.R.C.P. Ed., Much Hadham, Herts.

1879 WILLETT, CHARLES VERRALL, 8A, Oxford and Cambridge Mansions, W.

1861 WILLIAMS, ARTHUR WYNN, M.D., Physician to the Samaritan Free Hospital; 1, Montagu square, W. *Council*, 1871. *Trans.* 7.

Elected

1872 WILLIAMS, JOHN, M.D., F.R.C.P., Assistant-Obstetric Physician to University College Hospital; 11, Queen Anne street, Cavendish square, W. *Council*, 1875-76. *Hon. Sec.* 1877-9. *Vice-Pres.* 1880-2. *Chairman Midwifery Board* 1884. *Trans.* 6.

1881 WILLIS, JULIAN, M.R.C.P. Ed., 82, Sutherland gardens, Maida vale, W.

1873 WILSON, JOHN HENRY, L.K.Q.C.P. Ireland, Obstetric Physician to the Ladies' Charity and Lying-in Hospital; Kensington Lodge, Kensington, Liverpool.

1860 WILSON, ROBERT JAMES, F.R.C.P. Ed., 7, Warrior square, St. Leonard's-on-Sea, Sussex. *Hon. Loc. Sec. Vice-Pres.* 1878-80.

1866 WILTSHIRE, ALFRED, M.D., F.R.C.P., Joint Lecturer on Midwifery at, and Assistant-Obstetric Physician to, St. Mary's Hospital, and Physician for the Diseases of Women to the West London Hospital; 57, Wimpole street, Cavendish square, W., and Torridon, Somers road, Reigate. *Council*, 1870. *Hon. Lib.* 1871-3. *Hon. Sec.* 1874-6. *Vice-Pres.* 1877-9. *Trans.* 5.

1877 WINTLE, HENRY, M.B., Kingsdown, Church road, Forest hill, S.E.

1880 WOODWARD, G. P. M., M.D.

O.F. WORSHIP, J. LUCAS, Manor House, Riverhead, Sevenoaks, Kent. *Council*, 1875-77. *Vice-Pres.* 1883-4. *Trans.* 3.

1881 WORTHINGTON, GEORGE FINCH JENNINGS, M.K.Q.C.P., Sidcup, Chislehurst.

1876 WORTS, EDWIN, 6, Trinity street, Colchester.

1871 YARROW, GEORGE EUGENE, M.D., 87, Old street, E.C. *Council*, 1881-3.

1882 YOUNG, CHARLES GROVE, M.D., New Amsterdam, Berbice, British Guiana.

1874 YOUNG, DAVID, M.D., 20, Piazza di Spagna, Rome [care of Mr. Lewis, Gower Street].

1861 YOUNG, WILLIAM BUTLER, 10, Castle street, Reading, Berks.

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OBSTETRICAL SOCIETY

OF

LONDON.

SESSION 1883.

JANUARY 10TH, 1883.

J. MATTHEWS DUNCAN, M.D., F.R.S. Ed., President, in the Chair.

Present—33 Fellows and 2 visitors.

Books were presented by Dr. James Barr, Dr. L. D. Bulkley, Dr. Henri Martin, Dr. L. A. Neugebauer, Dr. Playfair, and the Council of University College.

George R. E. Bonsall, L.R.C.P. Ed. (Hornsey Rise), was was declared admitted a Fellow of the Society.

The following gentlemen were elected Fellows of the Society:—William Augustus Bonney, M.D.; Christopher Childs, M.A., M.B. Oxon. (Weymouth); Edward Clapham, M.D. (Wimbledon); William Coates, M.R.C.S.; W. H. Fenton Jones, M.R.C.S.; William John Pook, L.R.C.P.; James J. Reynolds, L.R.C.P. Lond. (Portland); John Coryton Roberts, L.R.C.P. Ed.; Edward Sabine Tait, M.B.; and William Cairns Wicks, M.B. Ed. (Newcastle-on-Tyne).

Dr. HEYWOOD SMITH exhibited a fœtus with an outgrowth from the end of the coccyx, similar to one figured in Martin's 'Atlas,' Pl. LXXIV, fig. 4, but whereas that was found to be a *fœtus in fœtu*, this tumour, 3½ inches long, and 7 inches in circumference, was found to consist of a mass of undeveloped embryonic tissue and some small round cells, with a very faint fibrillar arrangement. The most remarkable feature in the specimen was, however, that which seemed to constitute it the "missing link." From the coccyx there are traceable four prolonged vertebræ, as of a tail, consisting each of a cartilaginous body with spinous processes. The specimen came from a woman, æt. 34, who had had seven previous pregnancies. She ceased menstruating May 1st, 1882. Dr. Heywood Smith saw her October 25th, and diagnosed something wrong with the fœtus, which was expelled November 19th. The mother had about the third month been annoyed on several occasions by a man obtruding himself on her notice who was suffering from a large tumour of his neck.

Dr. HEYWOOD SMITH also exhibited the uterus of a patient which he had removed two days previously by Porro's operation. The patient, æt. 20, a strumous subject, was taken in labour at term on Saturday, January 6th; on the 7th there was a show, but the midwife, though she felt the funis presenting, failed to recognise the great deformity of the pelvis. She was seen by the medical officer of the St. Giles's Workhouse on the morning of the 8th, when the cord was prolapsed and dead; he then perforated the head, and Dr. Heywood Smith was called to the patient at 1.45. He found the conjugate diameter to be only 1½ or 1¾ inches, but, thinking there was a little more room on the left side of the pelvis, he attempted delivery with the cephalotribe and with craniotomy forceps. After three quarters of an hour of ineffectual attempts, in which only a few fragments of bone were removed, and considering any further attempt at the removal of the child *per vias naturales* would expose the patient to very grave risk, he determined to perform

Porro's operation. This was done about 4.15 p.m. under eucalyptus air, the uterus being drawn out of the abdominal wound before it was opened. The stump was secured at the lower angle of the wound. The operation lasted nearly an hour. The specimen exhibited showed very clearly the rugæ on the external surface of the uterus.

Dr. FANCOURT BARNES remarked that the proceeding of attempting to draw the uterus out of the abdomen before incising it, as recommended by Müller, was a vicious one, and required a large abdominal incision, as well as further complicating the operation by adding to the difficulty of one of the most important steps in the operation, the application round the cervix of Cintrat's ligature. The original plan of Porro, incising the uterus, and before drawing it out of the abdomen, was the best in all respects.

NOTES OF A SPECIMEN OF ANTEFLEXION OF THE UTERUS.

By W. S. A. GRIFFITH, F.R.C.S., M.R.C.P.,
TUTOR IN MIDWIFERY AND THE DISEASES OF WOMEN, ST. BARTHOLOMEW'S HOSPITAL.

THIS specimen, which I found in the museum attached to the Sussex County Hospital at Brighton, I am enabled to bring forward by the kindness of Mr. Nathaniel Blaker the curator. The following is the description in the Museum Catalogue:

"J. 31. Preparation showing complete anteflexion of uterus, the organ is bent sharply on itself so that the fundus is in juxtaposition to the fundus of the bladder. The adjacent parts, Fallopian tubes, ovaries, &c., were all agglutinated into one mass by firm old adhesions.

"The cavity of the womb is much contracted at the bend, while towards the fundus it is dilated into a sac of the size and shape of an almond, and contains the remains of a clot of blood.

"The preparation was taken from an unmarried woman,

æt. 28, who while in apparently perfect health was seized while dancing with pain in the left iliac region which steadily increased. This was succeeded by obstinate constipation and true ileus, of which she died in about three days.

"At the post-mortem examination she was found to have acute peritonitis with great effusion of lymph, the result of the bursting of a cyst in the broad ligament, which took place probably at the time of seizure.

"She always suffered pain towards the termination of the catamenial periods which were otherwise regular.

"The fixed condition of the uterus was detected during life by vaginal examination.

"Presented to the museum by Dr. Hall."

I am indebted to Mr. Brenchley, of Camberwell, whose patient she was nearly twenty-five years ago at Brighton; and to Dr. Hall, of Brighton, who was called in consultation during the fatal illness, for some further details which they have been kind enough to send me in answer to a request for further information especially as regards the existence of dysmenorrhœa.

115, The Grove, Camberwell, S.E.,
Oct. 29th.

DEAR SIR,—The patient was a remarkably fine, tall, well-grown, and handsome young woman. She had remarkable good health, and never complained of anything, but there was a history, three years previously, of acute pain and inflammation in the left iliac region. When seen, she referred her pain to this part, and it was, in no sense, an ordinary case of peritonitis, it was diagnosed to be inflammation of left ovary. She had pain there, sickness, and constipation, she lived but three or four days. On post-mortem, a most extraordinary state of the gut was found, and herein was my chief interest. There appeared to have been old inflammation of the left ovary, it was destroyed, and was a mere bag of creamy deposit. It had adhered to the gut, and this inflammation had burst the gut, and a large pouch had thus been formed, the gut having adhesions all round to the pelvis. It was quite green and

semi-gangrenous. The marvel was how she could have got about with such a state of the gut, for it was evidently of long standing. It took place probably in the first attack three years previously, the second attack proving fatal. The parts around were dragged down by the adhesions of the gut and ovary, and I take it that the anteflexion of the uterus was entirely brought about by the dragging of the adhesions.—Yours very truly, HORATIO BRENCHLEY.

5, Albany Villas, West Brighton,
Oct. 17th.

DEAR SIR,—In reply to your letter, respecting the specimen of "Anteflexion of the Uterus" which I presented, many years since, to the museum of the Brighton Hospital, I have little to add to the description of it contained in the catalogue. The subject of it was a patient of Mr. H. Brenchley, then residing here. I was called in consultation upon the case about twenty-four or thirty-six hours before death, which was due to acute peritonitis with obstruction of the bowels, taking the form of ileus with stercoraceous vomiting. Injections with O'Beorne's tube, &c., were tried and found unavailable. On examination after death the whole intestines were matted together by effusion of lymph, and incapable of being separated or distinguished one portion from another, and drawn down and firmly adherent to the outline of the pelvic cavity, so much so, that it was a difficult matter to find and separate the uterus from the agglomerated mass, and it was to this condition principally, if not entirely, that the intestinal obstruction was owing, and all injections proved ineffective. The young woman was a lady's maid, and enjoyed good general health, only, as a rule, complaining of pain at the menstrual epochs towards, I understood, their subsidence. The evening she was seized the period was just passing away, and she was in high spirits and dancing about in fun with the other servants, when she was suddenly seized with violent pain in the left inguinal region followed by acute peritonitis and death on the third day. I recollect being so

struck with the complete character of the anteflexion that I comtemplated sending the specimen for the inspection of the late Dr. Churchill, of Dublin, who expressed in his work his disbelief of such a pathological condition of the womb.—Yours truly, ALFRED HALL.

The history seems clear that she was to all intents and purposes a perfectly healthy woman until eight days before death, though she had suffered three years previously from a pelvic inflammation which affected chiefly the left iliac region.

The cause of death was probably strangulation and gangrene of the bowel caused by the gradual contraction of the old perimetric adhesions, complicated probably by some effect of her romping and dancing. This occurred just at the termination of a menstrual period, evidence of which is manifest in the condition of the mucous membrane of the uterus.

As to dysmenorrhœa Mr. Brenchley tells me that no complaint was made to him on this point until the fatal illness, when the question was asked, she then stated that she always had some pain towards the subsidence of the period but not of such a character as to give rise to any complaint or to interfere with her duties.

The uterus is completely anteflexed and its fundus is bound down by adhesions, in all probability the result of inflammation three years before her death; the ovaries, Fallopian tubes, and broad ligaments are in the same way matted together and scarcely recognisable; the membrane binding down the flexion is quite distinct and is seen to pass across, not down, to the apex of the bend.

The walls of the uterus show what a firm healthy organ it was, and exhibit the condition described by Dr. Bantock, viz. a thickening of the concave side of the bend probably from a crowding together of the shortened but thickened muscular fibres at this point, there is no marked thining of the convex wall of the uterus and it is probably correct to say there is none at all.

In the description which I have copied from the 'Museum Catalogue,' it is stated that "the cavity of the womb is much contracted at the bend;" this statement is not correct, it is here even after twenty-five years in alcohol somewhat larger than normal. The bend is situated just at the junction of the cervix and body and above it the cavity is considerably dilated and was found to contain the remains of a clot of blood, the specimen is probably unique in this point and is of special interest in giving the positive anatomical proof of the possibility of such a condition which Dr. Herman said in his paper last summer was wanting.

What was the cause of this dilatation? If we reject, as I think we may do in this case, mechanical obstruction, we may fall back upon chronic congestion which is very likely to have occurred in an organ doubled on itself, and whose blood must escape by irregular and tortuous channels.

The results of the dilatation were probably retention of menstrual blood and debris, as was seen at the post-mortem examination, and this would be expelled, not as from the normal linear cavity of the uterus by overflow, but after the overflow had ceased by contraction of the uterus, which, if painful, would explain the "after pains" which she experienced.

This specimen helps to establish the important pathological fact that the acutest form of flexion of the uterus may be produced without interfering with the nutrition of its walls or diminishing its cavity, and that it may exist during the most sensitive period of the menstrual life without producing any symptoms or interfering in any way with perfect health.

Had she been married, the chance of becoming pregnant would have been probably more remote from the condition of the ovaries and Fallopian tubes than from the state of the uterus.

Dr. Routh thought the case quoted did not prove that the canal of a flexed uterus was necessarily not constricted at the internal os, because, first this woman was menstruating at the time, and it was a known fact that in such cases the uterine

cavity became in time dilated. Thus it was the legitimate practice in cases where the canal was so constricted that even a small probe could not be passed, to wait for a period when the opening became visible, and then measures of dilatation could be carried out. The lining membrane here was ulcerated or diseased, or so injured here by the spirit, that the patency at the inner os might be result of disease, and not the normal condition existing in other cases.

Dr. Graily Hewitt thought Mr. Griffith's case interesting in view of the rarity with which the condition of anteflexion was observable post-mortem. He would direct attention to a most valuable case recorded by Dr. Walshe, many years ago, in Ashwell's work, a case he had recently quoted in the new edition of his own work on 'Diseases of Women.' There was also a most complete specimen in University College Museum, which had been, he believed, there placed by Sir William Jenner some years ago. As regards the condition of the uterine canal in these cases, it seemed to be supposed by some that if the canal was pervious there could be no obstruction to the exit of menstrual or other fluid, but in point of fact the canal was often quite pervious, and yet there was a virtual obstruction in consequence of the coaptation of the opposite walls of the canal and the clinical facts observed, the passage of clots, the pains attending this, and the accumulation of leucorrhœal fluid in the uterus observable in such cases, amply showed the existence of obstruction. This virtual obstruction was often produced by the swollen, congested condition of the uterine tissues resulting from the flexion.

Dr. Herman said that Mr. Griffith's specimen did not in his (Dr. Herman's) mind furnish proof of the mechanical theory of the production of dysmenorrhœa by flexion of the uterus. There was no angle in the canal; it was bent in a curve, and there was no obstruction, the canal being, as Mr. Griffith had said, rather larger than usual. Dilatation of the uterus was met with without flexion of the uterus, and therefore, unless it were maintained that flexion prevented dilatation of the uterus, there was no reason why it should not occur with flexion. Besides, this uterus was adherent, and there were cases, which he had quoted in a paper read before the Society last year, which gave some reason for thinking that when the uterus was adherent and flexed, its canal might become blocked. But, as he had said in that paper, because a uterus fixed as well as bent became dilated, it did not follow that bending of a uterus which was free to move would produce the same effect.

Dr. Bantock desired to express his satisfaction at finding his views so remarkably confirmed by the specimen exhibited. He had long contended that flexion alone of the uterus did not necessarily produce pain at the commencement of menstruation

—the most severe pain of dysmenorrhœa; that this pain was absent when the canal was of large calibre; that constriction of the internal os was the chief factor in the production of this form of dysmenorrhœa; that the flexion was so frequently the cause of this constriction that it might be regarded as at least the indirect cause of the dysmenorrhœa; that enlargement of the uterine cavity was an invariable result of the (ante) flexion, and that in this we found the explanation of the pain occurring towards the termination of the period. All these points were illustrated in the specimen. He thought the views of those who adopted the "mechanical theory" were not sufficiently represented when the flexion alone was kept in view. It was certainly so in his case.

Mr. GRIFFITH observed, in answer to Dr. Routh, that a microscopical examination of the mucous membrane of the uterus had been made by Mr. Bowlby, and that it presented only the characters commonly met with at the termination of menstruation. This was in accordance with the history of the case.

CASE OF EXTIRPATION OF UTERUS AND APPENDAGES FOR EPITHELIOMA OF THE CAVITY.

By J. KNOWSLEY THORNTON, M.B., C.M.
SURGEON TO THE SAMARITAN HOSPITAL FOR WOMEN.

THE operations for extirpation of the cancerous uterus are still on their trial, and it is therefore a duty to report every case in detail. I fear this is not as yet sufficiently recognised by those members of the profession who have performed these operations. Many cases have been reported at the time of operation, and then no more has been heard of them, at least in the medical journals, or at the societies; one has been referred to as a success by a well-known surgeon in a published paper, without the operator thinking it necessary to contradict the misstatement, though the patient died within a day or two of the operation; others have been reported when immediately successful, but have died within a few months of recurrence of the disease, without any public statement of the fact. This reticence

on the part of the operators in this country, points, I think, too surely to the fact that the operation is rarely an immediately successful one, and when it is, gives but a short interval before fatal recurrence of the disease.

I think anyone who carefully studies the past history of uterine cancer, in all its forms, must come to the conclusion that speedy recurrence is likely to be the rule, rather than the exception, because from the nature of the organ and its relations to neighbouring parts it is impossible, in the vast majority of cases, to cut sufficiently wide of the disease to avoid infiltrated tissue. I do not refer to tissue infiltrated palpably, to such rough guides as touch and sight, but to that which the microscope would show to be affected. So strongly have I felt the truth of these theoretical objections to the operation, especially in the commoner forms of disease which attack the vaginal portion of the uterus, that I have refused over and over again to operate in cases sent to me as suitable for operation. When it was first revived by Freund, I did in one case consent to operate for epithelial cancer of the cervix, but after further consultation the patient decided against operation, and I feel sure that I was wrong and that she was well advised.

The cases which have always seemed to me to be the only cases in which the operation is justifiable, are those in which the disease is confined to the mucous membrane in the cavity of the uterus or to the uterine wall. These cases are, however, rarely to be diagnosed with sufficient certainty before the glands are affected or the surrounding tissues, so as to cause some fixing of the organ. The case I am about to relate was one of the rare exceptions to the general rule.

In October of this year, I saw with Dr. Matthews Duncan, a widow lady, aged sixty-four, with the following history:— Married at twenty-seven and confined prematurely within one year, while travelling abroad. Never again pregnant. Husband paralysed within two years of marriage, and the patient nursing and tending him for twenty years, then seventeen years a widow.

The menses appeared first when she was fifteen. The menopause occurred without special trouble about fifty, and nearly ten years later while travelling on the continent she again became unwell, and metrostaxis recurred at irregular intervals. In the autumn of 1880, she consulted Dr. Christian Budd, of North Pawton, and he found a little warty growth on the os, and twice cauterised it with nitric acid, this gave temporary relief, but the coloured discharge recurring he advised her to go to London, and in July, 1881, she passed under the care of Dr. Matthews Duncan, who found a small pea-sized, shrivelled polypus and removed it. Again she was better for a time, but in July, 1882, she returned to Dr. Duncan, and he dilated the cervical canal and found the cavity of the uterus full of soft epithelioma. He then suggested complete extirpation, and Sir James Paget having seen the patient in consultation and sanctioned the operation, I was asked to examine her and if I thought the case a suitable one to undertake the operation. I made a careful examination and found the uterus fairly mobile, and the general condition of the patient such as to warrant as hopeful a prognosis as one could give in so serious a case. Both Dr. Duncan and myself thoroughly explained to the patient the great risk, and I do not think that we either of us minimised the danger. With generally favorable conditions, two somewhat unfavorable symptoms were present. The temperature was persistently subnormal, this I have often noted in cases of malignant disease, and believe to indicate that the powers of the patient are already lowered by the local mischief.

The free mobility of the uterus was somewhat interfered with at its left upper angle. The patient had, however, some years back, had an attack of peritonitis, and this might be a sequel of that illness.

The operation was performed on October 25th, 1882, at 8.30 a.m., in the presence of Dr. Duncan and Professor Clementi, of Catania, Dr. Champneys kindly giving the anæsthetic and Mr. Meredith assisting.

The patient was first placed in the lithotomy position,

and the vagina thoroughly cleansed with carbolised water, and the cervical canal packed with pieces of sponge dipped into tincture of iodine, in the hope that any fluid which was afterwards during manipulation squeezed out of the uterus would be rendered aseptic. I was prepared either to remove the organ by the vagina or by abdominal section, but decided in favour of the latter procedure, being chiefly guided by the consideration that Schroeder in his remarkably successful series of vaginal extirpations has found it advisable to leave the ovaries and tubes. If they are removed the broad ligament stumps are too short and the ligatures apt to slip. In the last report I have seen of his practice he had had eight cases with only one death, and this occurred frem hæmorrhage due to slipping of one of the broad ligament ligatures. But to leave the tubes in a case of cancer of the lining membrane of the uterus seems to me a partial operation of a kind which is not justified by the pathology of the disease. As it turned out in the case under discussion, it would have been quite impossible to remove the left tube and ovary by the vaginal operation, as the tube was closed at its fimbriated extremity by adhesions to the side of the pelvis, and was cystic and much shortened. It was this condition which caused the impaired mobility of the uterus on the left side noted before the operation by Dr. Duncan.

The patient was placed in the ovariotomy position, and the abdomen opened in the median line by a six-inch incision, the parietes were very fat and there was some difficulty in entering the peritoneum, owing to the adhesion of a fat omentum to the parietes along the whole of the right side of the abdomen. Doubtless this had been caused by the inflammatory attack which sealed and caused adhesion of the left tube. In order to avoid the passage of any of the fluid from the cavity of the uterus into the peritoneum, I did not transfix the organ with a string, or have it held up by a vulsellum, and this added to the difficulty in transfixing and tying the broad ligaments. I was much aided, however, by a suggestion of Dr. Duncan's, which he kindly

put into practice, viz. the insertion and inflation of a large rubber ball in the rectum.

The left broad ligament was first transfixed with a double No. 3 silk (as in oöphorectomy), the upper ligature, locked with the lower, was tied so as to include the spermatic artery; the lower ligature was then threaded again with a third and carried through the broad ligament, the middle loop being tied so as to include the pampiniform plexus, and the third being left loose for tying the uterine artery. The right broad ligament was treated in the same way. The upper margin of the bladder being defined by the introduction of a sound, a transverse cut, about two inches long, was made through the peritoneal covering of the uterus, and the two organs were separated by enucleation with the finger down to the vagina. More hæmorrhage took place during this procedure than at any other part of the operation, but it was chiefly venous oozing and soon ceased. The opening into the vagina was made by the introduction of scissors with my right hand, cutting against my left in the abdomen; this I found the most troublesome part of the operation, chiefly, I think, from the uterus not being held up and fixed. I enlarged this opening laterally, partly with scissors and partly by tearing, till I was close to the uterine arteries on each side, and then I incised the peritoneal covering of the back of the uterus, and enucleating down to the vagina in such a way as to push back the ureters, I cut into the vagina in this situation. At this stage of the operation the ovaries and tubes were removed and the broad ligaments divided down on each side to the situation of the uterine arteries. The middle loop on the left side immediately slipped off, the space being so very short for cutting between the uterus and side of pelvis, but I managed to secure the broad ligament without any troublesome hæmorrhage. The uterus was now merely held by the small portions of broad ligament and vagina, left to avoid cutting the uterine arteries, and the loose ligatures on each side having been tied, the organ was cut away. By this time all hæmorrhage of any moment had

ceased. During the operation one of my uterine sponge plugs was squeezed out, and some of the cancerous material followed and got on to the tissues, sponges, and my hands, so that the asepticity of the operation was destroyed entirely.

I first introduced one of the German T-shaped vaginal drainage tubes, but it evidently would not drain a deep pouch behind the posterior vaginal incision (remains of pouch of Douglas), so I introduced a Kœberle's glass tube into this pouch and brought it out at the lower angle of the wound. The vaginal opening, which was much smaller than I should have expected, I left open. The incision was closed by the usual silk sutures. The operation lasted fully two hours, and when the patient was placed in bed the vaginal temperature was only 96° with a pulse of 68. The patient rallied quickly, and the temperature ran up in the first six hours to 102·2°, pulse 100, respirations 20. Then the skin began to act well and the temperature steadily fell, and next morning was only 99·2°. The urine was scanty during the first thirty-six hours and the bladder irritable, then a natural but not excessive secretion was established, and all anxiety as to the ureters gradually passed away.

For the first three days the temperature and pulse varied between 98° and 100° and 94 and 106 respectively, and the breathing was tranquil and regular. There was no sickness, but a foul tongue and an absolute loathing of food, so we had to depend chiefly on beef-tea injections which were well retained and absorbed. The discharge from the abdominal tube was about an ounce and a half in the first twelve hours, dark bloody serum; less than an ounce in the next twelve hours and paler, and after this each twelve hours merely a drachm or two standing in the tube. At third dressing it was distinctly offensive. There was very little discharge from the vagina, and it remained odourless from first to last. For the first two days the patient was very drowsy, and then she brightened up and was more herself. On the evening of the third day I found that

the putrefaction had spread along the incision, and I let out a little fœtid thick pus at its upper part. On the fourth day the temperature was persistently subnormal, in the evening only 96·6°, and the distaste for food which had passed away returned. She had a restless night, and at 9.45 the next morning, just five days after the operation, died very quietly, conscious to the last.

I think there can be no doubt that the septic condition of the wound in the very fat abdominal parietes materially affected the result of the operation, and this was caused by the abdominal tube, and might possibly have been avoided if I had secured thorough vaginal drainage. I do not think one can exactly say that it was death from septicæmia, it was rather a gradual failure of strength, the result of inability to take nourishment, following the shock of a great operation in an elderly patient; but I feel convinced that the result would have been different if I could have avoided sepsis and saved the patient the pain and irritation of suppuration.

The latest statistics of this operation which I have seen, are those given in Hart and Barbour's 'Gynæcology,' and they give the relative mortality of the vaginal and abdominal methods, as 27·6 per cent. to 71 per cent. Such an immense difference should at once settle the choice of operations in favour of the vaginal method, if it can be shown to have as good ultimate results as those obtained by the abdominal section. At present there seems very little information to hand as to the ultimate fate of those patients who have escaped the dangers of the operation, and such as we have is not very encouraging. Carefully considering the difficulties and dangers in the light of the case I now record, I have come to the conclusion that in any future case I should adopt the vaginal method, unless the vagina was so small, or the uterus so relatively large, as to render it impossible. I have also decided not to use ligatures at all, but to apply long-handled pressure forceps before cutting through the broad ligaments, and leave them in position for a day or two after operation. They could

be rendered more thoroughly aseptic than silks passed through the vagina, and while their weight would tend to draw the wounded surfaces together, they would serve as efficient drains by keeping a clear passage from the bottom of the pelvis to the vaginal outlet.

Since coming to this decision I have learned that Mr. Wells, in the new edition of his work on the ovaries, has suggested the same method. I had not read this chapter before performing the operation, or I think I should very likely have given the suggestion a trial. The avoidance of ligatured stumps seems to me of the first importance in the presence of the very putrid matters usually present in uterine cancer.

Dr. EDIS thought there was one practical point worthy of notice, and that was in cases where the abdominal operation is performed, after ligaturing and dividing the several structures, to remove the uterus per vaginam, so as to avoid the smallest risk of any malignant secretion from the uterus gaining entrance to the peritoneal cavity.

Dr. BANTOCK had extirpated the uterus twice, once by the abdominal section and once by the vagina. Of the first the details were given at sufficient length before the Royal Medical and Chirurgical Society. Of the other nothing has been published. Both were fatal, from the difficulty of securing efficient drainage and preventing an accumulation in Douglas's pouch. He desired to point out that when the operation was done by abdominal section it was much facilitated by first dividing the mucous membrane of the vagina around the cervix, as practised by Freund.

Dr. AVELING said he believed the first proposal of pelvic drainage was made by Dr. R. W. Johnson, in his 'System of Midwifery,' published in 1769. He writes, "Could an aperture be made with safety at the bottom of the pelvis when hysterotomy is performed, in order to give vent to those humours, the probability of the mother's recovery would then I think be greater."

The PRESIDENT had taken part in three excisions of the uterus for cancer. All proved fatal. He was struck with the greater facility of the operation per vaginam than that by laparotomy.

ANNUAL MEETING.

FEBRUARY 7TH, 1883.

J. MATTHEWS DUNCAN, M.D., F.R.S. Ed., President, in the Chair.

Present—68 Fellows and 5 visitors.

On taking the chair the PRESIDENT declared the ballot open for one hour, and nominated Dr. A. T. Gibbings and Mr. Hopkins Walters as scrutineers.

Books were presented by Dr. Barnes, Dr. Fancourt Barnes, Dr. Matthews Duncan, and by the Royal Medical and Chirurgical Society.

Wm. Augustus Bonney, M.D.; Wm. Coates, M.R.C.S.; Wm. Archdeckne Duncan, M.D.; Joseph William Hunt, M.D.; William John Pook, L.R.C.P.; Francis J. R. Russell, L.K.Q.C.P.; and Edward Sabine Tait, M.B., were admitted Fellows of the Society; and the following gentlemen were declared admitted:—Christopher Childs, M.A., M.B. Oxon. (Weymouth); Edward Clapham, M.D. (Wimbledon); James J. Reynolds, L.R.C.P. (Portland); W. Cairns Wicks, M.B. (Newcastle-on-Tyne).

The following gentlemen were elected Fellows of the Society:—Charles Davidson, M.R.C.S. Eng., and Philip William Gowlett Nunn, L.R.C.P. Lond. (Bournemouth).

The following gentlemen were proposed for election :— Raherm Buksh, M.R.C.S. Eng.; Patrick John Cremen, M.D. (Cork); Henry Roxburgh Fuller, M.A. Cantab., M.R.C.S. Eng.; Theophilus Hoskin, L.R.C.P.; Percy S. Jakins, M.R.C.S. Eng.; Robert Edward Inman, M.R.C.S., Eng.; and Richard Unthank Wallace, M.B. Lond.

Mr. Griffith showed a specimen of retro-uterine perimetric abscess due to the opening into Douglas's pouch of one of a number of rectal fistulæ, and remarked that one would have expected that the result of such a perforation would have been the development of acute general peritonitis rather than the formation of a chronic abscess limited to parts of the pouch. He brought forward the specimen because it illustrated a cause of these abscesses not previously described.

EPITHELIOMA OF CERVIX, REMOVED BY ECRASEUR WIRE DURING PREGNANCY WITHOUT CAUSING ABORTION.

By Clement Godson, M.D.

E. C—, æt. 35, a monthly nurse, married eighteen years, no children, but two miscarriages, the last six years ago, was admitted into St. Bartholomew's Hospital on July 17th, 1882, under the care of Dr. Matthews Duncan.

Catamenia commenced at fifteen years of age, and always regular since, except during her two short pregnancies, the last occurrence a month ago.

Complains of yellow discharge for the last twelve months. During the last few weeks it has altered its character, being more watery and fœtid. There has been lately an occasional slight loss of blood between the

periods; three weeks ago there was a good deal of bleeding following coitus.

Has no pain except occasional sharp twinges in the lower abdomen and back lately. Has been a healthy woman, and there is no family history of phthisis or carcinoma.

Dr. Matthews Duncan's examination.—"*Per hypogastrium.*—Nothing abnormal. Vulva healthy.

Per vaginam.—Cervix enlarged, tuberous, and ulcerated, bleeds easily, fills the end of a pretty large speculum. Vagina healthy. Uterus mobile."

As the monthly period was due within a day or two the operation for removal of the diseased cervix was postponed.

July 25th.—Menstruation commenced last evening, two days late.

29th.—The period ceased yesterday, the loss has not been great.

On August 1st, in the absence of Dr. Matthews Duncan, the patient being anæsthetised with gas and ether, I passed the wire of an écraseur around the cervix as high as possible, and removed the diseased portion. Very little bleeding took place. The vagina was syringed with cold water, and then packed with dry cotton wool.

2nd.—The patient has passed a good night. No pain; no rise of temperature. Plug removed from vagina; no bleeding.

4th.—No pain, and no discharge of blood.

10th.—Feels well. I examined per vaginam and noted:—The stump of the anterior lip of the cervix feels somewhat rough, that of the posterior lip is smooth; the examination does not give rise to bleeding. *Per speculum.*—The stump of the anterior lip is of a deep red colour, and shows slight prominences.

One of my clinical clerks remarked that he fancied this was the posterior lip, as there was a furrow in front of it which he took to be the os uteri. I explained to him that this furrow was caused by the retraction of the

mucous membrane of the anterior vaginal fundus from the amputated cervix, and that the os uteri was situated behind, and to demonstrate this I passed the sound through the os, and it entered at once the cavity of the body of the womb.

13th.—Some hæmorrhage occurred yesterday, very bright coloured; has had slight pains, intermittent; the loss is very slight to-day.

14th.—The pains have increased, and this morning a fœtus, apparently of about eight weeks' development, was expelled; the placenta followed. All the pains have disappeared since, there is hardly any loss of blood, and she feels very comfortable.

This case affords many points of interest. There was nothing to lead us to suspect that she was pregnant. She had not been so for six years, and she believed herself to be menstruating regularly. It is true that she went while in hospital two days beyond her time, and probably the loss which then occurred, and continued during three days, was not menstrual blood, but came from the ulcerated growth. There is little or no doubt that the abortion was caused by my having passed the sound within the womb, for it occurred almost directly afterwards, and ten days had elapsed after the removal of the cervix without any sign of aborting.

This is the second time it has happened to me to amputate a cancerous cervix during pregnancy without abortion ensuing, in both cases in ignorance that pregnancy existed.

The other case is reported in the 'Transactions' of this Society for 1875, vol. xvii, p. 32, in a paper by Dr. Charles T. Savory, communicated by me. This patient was about five months pregnant when the operation took place, and she ultimately gave birth to a living child after a very rapid labour.

Dr. Herman, in his admirable and exhaustive paper on "The Treatment of Pregnancy complicated with Cancerous Disease of the Genital Canal," in vol. xx of our

'Transactions,' p. 223, quotes ten cases in which the diseased part was removed during pregnancy, in only one out of these was the operation immediately followed by abortion, and five out of the ten were delivered at full term.

The case I am now reporting is therefore one more in support of the conclusions which Dr. Herman has arrived at, and with which I fully concur, viz. "that the diseased part may be removed during pregnancy without any great risk of inducing abortion, and that the removal of it during pregnancy is not much, if at all, more dangerous than in the non-pregnant condition."

Therefore, if at any stage of pregnancy a cancerous growth of the cervix which is capable of being removed be detected, there seems no doubt that the operation should be undertaken without delay, and the idea of abortion or premature labour ensuing should not be taken into consideration.

This case supports Cohnstein's theory that cancer rather favours the occurrence of pregnancy, for this patient had not been pregnant for six years, and she would not believe that she had aborted until I told her I had seen the fœtus. This is a theory I have long entertained and taught; and until now, when reading Dr. Herman's paper, I did not know that anyone had advanced it.

The case is an example also of what I am pointing out on almost every day that I see the out-patients at St. Bartholomew's Hospital, that this disease appears to attack those who have previously been the healthiest of women, in whose family no history of cancer can be found, and who have not been subject to leucorrhœa or have ever before been under treatment for any uterine complaint.

This case also supports the observation I made in the discussion upon Dr. Champneys' excellent paper on "The Pain in Pelvic Cancer," that this is, as a rule, in cases of cancerous disease of the neck of the womb, a late symptom. Ever since this paper was read, now three years,

I have not seen a case of the kind without carefully investigating this point, and it is rare for there not to be one or two cases at each of my visits to the hospital; and I have been more than ever astonished at the extent to which the disease may affect the cervix without any pain whatever being felt. I hope before very long to tabulate these cases and bring them before the Society.

I notice in Dr. Herman's paper that in several of the cases he has recorded the pouch of Douglas was opened, during the operation, by the wire of the écraseur. I know also of several instances in which this has occurred. I could not say how many times I have performed this amputation, but it is a very large number, and this accident has never happened to me; I feel certain, because I never pull down the cervix, I always keep the end of the écraseur pushed *well up* in front of the cervix. It seems only natural that if the cervix be pulled down a portion of Douglas' pouch descends with it, and very readily is included in the loop of the wire. Whereas, I believe it is impossible to catch it if the cervix is pushed up while the wire is being tightened around it.

Dr. ROUTH stated that a practical deduction might be drawn from Dr. Godson's paper. *If* it was the fact that a cervix uteri could be taken off by the écraseur without inducing abortion, then in some of those cases in which cancer coexisted with advanced pregnancy, this operation might be performed before labour commenced, and possibly brought on prematurely, and the life of child and mother saved without the risk of a probable Cæsarian section. He had before mentioned a case which he saw in Vienna, when at the full term a woman was in labour, and the whole cervix came away as a ring before the child. The écraseur would thus only be imitating nature, but we could select the most favorable time.

Dr. PLAYFAIR said that there were several points of great interest recorded in Dr. Godson's communication on which he would venture to offer a few remarks. In the first place, he would observe that he could not agree with him in his statement that epithelioma was most apt to occur in a perfectly healthy cervix. So far as his own experience went, and he believed it was corroborated by the writings of others, epithelioma generally commenced in a cervix that was in an unhealthy state. For

example, many American writers had pointed out that it was specially apt to engraft itself on a cervix that had been lacerated in previous labours, and he had himself observed several instances of this. At the same time he stated this as his impression only; and it would require many careful observations before this point could be positively decided. With regard to epithelioma complicating pregnancy, there was one point of clinical interest with regard to it to which Dr. Godson had not alluded, and that was the extreme rapidity with which malignant disease was apt to increase during pregnancy. This was probably the result of the increased vital activity of the uterine organs during gestation. The President would probably recollect the case of a lady whom he had been kind enough to attend during his (Dr. Playfair's) absence from London two years ago. He had had an opportunity of watching the extremely rapid progress of the disease, and this was so rapid that Dr. Duncan and Sir Spencer Wells, who had seen the case with him, had given it as their opinion that six weeks or so would probably terminate the patient's sufferings. As soon as pregnancy was ended by spontaneous abortion, the disease ceased to advance as before, and this patient was still alive. The last point he would refer to was the use of the écraseur for removing epithelioma of the cervix; although this was the established practice, he believed it to be the worst way of dealing with the disease, for while it shaved off the sprouting mass of epithelioma it left its base infiltrated with cancer cells, from which a fresh outbreak of disease was sure to recur before long. Such a procedure could only be looked on as a temporary palliation of the more prominent symptoms. Putting aside the question, then *sub judice*, of the entire removal of the uterus, he believed the only satisfactory operation for epithelioma of the cervix was that practised by Marion Sims, which consisted in the excision of the mass by knife and scissors, and the subsequent application of chloride of zinc to destroy the infiltrated tissues of the cervix. He had done this repeatedly, and had several patients now alive and well, a considerable time after operation. Only the day before he had seen a lady on whom he had operated two and a half years ago. She then had a large sprouting epithelioma filling the vagina, and now she is perfectly strong and in robust health.

Dr. HERMAN thought it required a great deal of evidence to show that cancer of the cervix favoured conception. He thought that if it were so, pregnancy with cancer of the cervix would be much commoner than it was. He did not think he exaggerated when he said he had seen hundreds of cases of cancer of the cervix in married women during the child-bearing ages, but he had only seen five complicated with pregnancy. If cancer favoured the occurrence of pregnancy he thought he would have

seen more cases of that complication. He had amputated the cervix with the galvanic cautery, and thought that this instrument did more than remove a thin slice. It not only cut through the cervix, but burnt the tissues on each side for some little distance from the line of division. This could be inferred from the fact that the stump left was usually slightly funnel shaped, and the piece removed was smaller after removal than it looked when the wire was adjusted before cutting through the cervix. He avoided pulling down the cervix. In cases of cancer the enlargement of the cervix commonly prevented the wire from slipping down when it was once passed up over the enlarged part; but where the wire had any tendency to slip, it was his practice to cut with scissors a shallow groove for the wire to lie in, and thus to secure its remaining in the desired position.

Dr. ROGERS said he had many years back brought to the Society the neck of a uterus which had separated during a long protracted labour from a German lady. The child lived, and the uterus, on being examined some months after, what remained of neck was found in a hardened state. He subsequently lost sight of the case. That abortion may follow amputation of a cancerous cervix was proved about two years back in a case admitted under his care in the Samaritan Hospital for repeated hæmorrhage. The cervix was found to be a mass of epithelioma, bleeding on the least touch, and the uterus was large. When questioned she strongly denied being pregnant, or that it could possibly be the case. The cervix was removed by the electric wire cautery with greatest precaution, yet severe hæmorrhage followed the amputation, checked by plugging with cotton wool and styptics. Three days after bearing-down pains set in, and she aborted of a fœtus about the fourth month, but would not believe this till it was shown her: no sound had been passed into uterus. Dr. Rogers felt certain that Douglas's space might be opened into, notwithstanding every possible care and without any traction being used; one such case had occurred in his practice, but no difficulty occurred in its management.

Dr. EDIS thought there was one point of great practical importance in cases of epithelioma of the cervix uteri, and that was the early diagnosis of the disease. If any suspicion existed as to the nature of the case when first seen, a second opinion should at once be procured, and not allow the patient to go on unrelieved until the disease became so marked as to prevent any error in diagnosis, at the same time to preclude any idea of radical treatment.

Annual Meeting.

The Report of the Treasurer, Dr. Potter, with the audited balance sheet, was then read.

It was moved by Dr. Routh, and seconded by Dr. Daly, "That the audited report of the Treasurer just read be received, adopted, and printed in the next volume of the 'Transactions.'"

The Report of the Hon. Librarian, Dr. Champneys, was then read, and its adoption was moved by Dr. John Williams, seconded by Mr. Frederick Wallace, and carried unanimously.

Report of the Honorary Librarian.

I have the honour to present to the Society the usual annual report.

The Library has been as freely used by Fellows in the past as in former years, and with the increase of its size it is believed that its usefulness has increased also.

The limited space available in the present rooms, together with the near proximity of other medical libraries, have, as hitherto, guided the Library Committee in the choice of books recommended for purchase by the Society; but they have, on the other hand, endeavoured to acquire each work of importance bearing on Obstetrics or Gynæcology as it has appeared, and thus to make the Library as complete as possible.

A provisional alteration in the Library hours on Saturdays has proved a great convenience to the Sub-Librarian, and appears to have caused no trouble to the Fellows.

At the end of the year 1881 the Library consisted of 3056 volumes. During 1882 this number has been

BALANCE-SHEET OF THE OBSTETRICAL SOCIETY OF LONDON.

(Abstract of the Receipts and Expenditure for the year ending December 31st, 1882.)

1882. RECEIPTS.	£	s.	d.
To balance in hand from 1881	172	17	5
(1) Subscriptions received during 1882: 635 at £1 1s. (1 at £2 2s.)	668	18	0
(2) Composition Fee	10	10	0
(3) Midwifery Examination Fees	40	2	0
(4) Sale of 'Transactions' and 'Rules for Infant Management' (Longmans) — 65 6 7			
Do. Do. (Society) — 0 0 0			
Sale of Duplicate Books — 1 9 3	56	15	10
(5) Interest on 3 per-cent. Consols January, 1882 — £17 18 9			
July, 1882 — 19 3 7	37	2	4
Amount of stock, 3 per-cent. Consols, standing in the names of the Trustees — £1305 14 0			
	£986	5	7

By EXPENDITURE.	£	s.	d.
(1) 'Transactions,' Vol. XXIII, Printing, Lithography, Paper, and Binding, Index, and delivery of Volume	280	4	7
(2) Library: Books Purchased and Binding	52	2	1
(3) Museum and Library: Rent — £152 0 0			
Librarian, Salary and Commission — 116 15 6			
Repairs to Furniture, Cleaning, Coals — 6 5 6			
Insurances — 2 10 0			
Petty Cash Expenditure — 18 0 0	295	11	0
(4) General Meetings and other Expenses: Meeting-room — £42 0 0			
Expenses of Meetings — 30 10 4			
Stationery, Postage, Loss on Cheques (4s. 4d.) — 36 10 8	109	1	0
(5) Extraordinary Expenses: Donation to Mr. Wheatley — £21 0 0			
Expenses for Negotiations *re* 54, Berners Street: Lawyer — £1 8 4			
Architect — 10 10 0			
Surveyors — 9 17 8	42	16	0
Balance in hand at Bankers — £198 2 11			
1 Cheque not cleared, £1 1s.; £7 7s. not paid in	206	10	11
	£986	5	7

January 25th, 1883.

Examined and found correct,

W. F. CLEVELAND,
CLEMENT GODSON,
FREDERICK WALLACE, } *Auditors.*

G. ERNEST HERMAN, *Hon. Sec.*

increased by the gift of 33 books and 41 pamphlets, the latter being bound into 4 volumes, or a total of 37 volumes. The Society has bought 20 books and 10 pamphlets, the latter being bound into 1 volume, making 21 volumes. The periodicals taken in amount to 46, this makes a grand total of 3160 volumes as against 3056 last year.

FRANCIS HENRY CHAMPNEYS.

The Report of the Chairman of the Board for the Examination of Midwives was then read, and its reception, and a vote of thanks to Dr. Aveling and the other Members of the Board, was moved by Dr. EDIS, and seconded by Dr. CARTER, and was carried with applause.

The Examination of Midwives.

The Board of Examiners appointed by the Council of this Society again presents its Annual Report. During the past year forty-two candidates offered themselves for examination. Of this number thirty-seven received the Society's diploma and five failed to satisfy the Examiners.

The Board has now entered upon the twelfth year of its existence. Since its establishment it has been called together about ninety times. It has examined 162 candidates and admitted 145. This number represents about 1 per cent. of the women practising as midwives in England and Wales. It is painfully evident, therefore, that the honorary labour and sacrifice of time which the members of the Board have so cheerfully bestowed in endeavouring to ameliorate the present condition of midwives have had practically very little effect in consummating the laudable intentions of the Society. Thousands of women are still acting as midwives who have no competent knowledge of their calling. The lives of mothers and their infants are in constant jeopardy. Deplorable accidents and mutilations occurring to women in childbirth

are recorded by the press with sickening regularity, and but a few meetings since a shocking instance was related before this Society in which the whole womb and part of its appendages had been torn away by a woman calling herself a midwife.

The Board of Examiners, therefore, once more ventures to urge upon the Council the pressing necessity which exists for legislation providing for the instruction, licensing, and registration of midwives, and rendering it penal for ignorant women to call themselves midwives unless they are legally licensed and registered by Act of Parliament.

J. H. AVELING, M.D.,

Chairman of the Board for the Examination of Midwives.

The Scrutineers retired, and on their return the result of the ballot for officers and council for the ensuing year was declared as follows:

Honorary President.—Arthur Farre, M.D., F.R.S.

President.—Henry Gervis, M.D.

Vice-Presidents.—John Brunton, M.D.; Frederick H. Daly, M.D.; Clement Godson, M.D.; Jonathan Hutchinson, F.R.C.S.; John Thorburn, M.D. (Manchester); J. Lucas Worship (Sevenoaks).

Treasurer.—John Baptiste Potter, M.D.

Honorary Secretaries.—Alfred Lewis Galabin, M.A., M.D.; George Ernest Herman, M.B.

Honorary Librarian.—Francis Henry Champneys, M.A., M.B.

Honorary Members of Council.—Henry Oldham, M.D. (*Past Pres. and Trustee*); Robert Barnes, M.D. (*Past Pres. and Trustee*); John Hall Davis, M.D.; Graily Hewitt, M.D.; John Braxton Hicks, M.D., F.R.S.; William O. Priestley, M.D.; Edward John Tilt, M.D.; Sir Thos. Spencer Wells, Bart., F.R.C.S. (*Trustee*); J. Matthews Duncan, M.D., F.R.S. Ed.

Other Members of Council.—Henry Charles Andrews,

M.D.; George Paddock Bate, M.D.; Henry Bennet, M.D. (Weybridge); Peter Lodwick Burchell, M.B.; T. Edmondstoune Charles, M.D. (Cannes); Chas. J. Cullingworth (Manchester); Alban Doran; Sir Joseph Fayrer, M.D., K.C.S.I.; Edward Malins, M.D. (Birmingham); Gustavus Charles P. Murray, M.D.; William S. Playfair, M.D.; Walter Rigden; George Roper, M.D.; William Stephenson, M.D. (Aberdeen); William Heath Strange, M.D.; John Knowsley Thornton, M.B., C.M.; John Wallace, M.D. (Liverpool); George Eugene Yarrow, M.D.

The PRESIDENT then delivered his Annual Address.

ANNUAL ADDRESS.

GENTLEMEN,—At this annual meeting, as at the last, I have to congratulate the Society on continued prosperity. Our library has been increased by the addition of 104 volumes, making 3160 in all. 42 women have been subjected to the midwifery examination, and of these 37 have passed. Our fluctuating membership stands at present (January) at the large figure of 694. Of these 37 have joined the Society during the year; and in the same period 15 have resigned their Fellowship, and the names of 24 have been erased from our list. We have lost 8 by death: Mr. John Sutcliffe, of Denmark Hill; Mr. Robert Charles Croft, of Camden road; Dr. George Yeates, of Walthamstow; Dr. Frederick John Butler, of Winchester; Dr. Marshall; M.P. Dean of Keene, Ontario; Mr. Frederick George White, of Exeter; Mr. Alfred Boyd Hopkins, of Shoreditch; and Dr. Richard Cross, of Scarborough.

Dr. Richard Cross was a highly respected citizen and esteemed practitioner in Scarborough. In the 'Medical Times and Gazette' I find that after studying at Guy's Hospital he became, in 1839, a Licentiate of the Society of Apothecaries, subsequently in 1840 a member of the

Royal College of Surgeons, and M.D. of St. Andrews in 1852. In 1869 he contributed to the 'Lancet' a table of obstetrical studies. He held several medical appointments, and was Mayor of the borough in 1860-1. He died on Nov. 19th, 1882, and was interred with military honours, the magistrates, Mayor and Corporation, attending the funeral.

Dr. Frederick John Butler, son of the Vicar of Empshot was born March 21st, 1819, and died March 16th, 1882. He was a student of Guy's Hospital, a member of the Royal College of Surgeons 1840, and Fellow by examination in 1849; he was also a Licentiate of the Society of Apothecaries and M.D. of St. Andrews. He was much respected, largely employed in practice, held numerous appointments; and at his funeral there attended the adjutant and permanent staff of the 3rd Hampshire Militia Regiment.

Besides a large number of very valuable oral communications with specimens, we have had read at our meetings twenty papers, most of which will appear in our 'Transactions.' Of these the half has been obstetrical and the other half gynæcological. The obstetrical papers include Thornton on "A case of Extra-uterine Fœtation with hypertrophy of Placenta successfully treated by Abdominal Section," Popow on "Corpus Luteum," Champneys on "Obliquely Contracted Pelvis with Unilateral Synostosis;" and again Champneys on "A Kyphotic Pelvis," Duncan on "Puerperal Diabetes," Chahbazian on "The Treatment of Post-partum Hæmorrhage by Ergotinine," Wynn Williams on "A New Mode of Operating for Ruptured Perineum," Edis on "Cancer of the Cervix obstructing Labour; Cæsarian Section, Recovery;" Herman on "Two Cases of Cancer of Cervix obstructing Labour," and Jennings on "Transfusion." The gynæcological papers are Galabin on "Unilateral Hæmatometra," Playfair on "Tracheloraphy," Braithwaite on "Two Cases of Unilateral Vaginal Oophorectomy," John Williams on "The Natural History of Dysmenorrhœa," Herman

on "The Relation of Backward Displacements of the Uterus to Dysmenorrhœa," Lewis on "A Transverse Septum in the Vagina," Duncan on "A Case of so-called Imperforate Hymen," Swayne on "A New Intra-uterine Pessary," Griffith on "A Specimen of Anteflexion," and Thornton on "A Case of Extirpation of Cancerous Uterus."

During the Session effort has been made to obtain for the Society new rooms, for it has been long felt that our library accommodation costs too much, and that it would be an advantage to have our meeting-hall and library in close proximity to one another. In this matter we owe much to our Senior Honorary Secretary, who has spared no pains in the conduct of the business; but our first efforts have proved vain. Since these original attempts with St. Peter's Hospital as a whole, quite recently indeed, we have taken new premises for the library, being the first floor of what was St. Peter's Hospital. Here we have, next door to the hall in which our meetings are held, ample library accommodation. The new apartments are larger, more commodious, and in every way better than our present rooms and will cost us much less. We may congratulate ourselves on this change, and in the name of the Society I may thank Dr. Galabin and the other members of the Committee appointed to look after this part of our affairs, for the zeal they have exhibited, and for the success which has attended their wisely directed efforts.

This great Society has many functions to fulfil, and of these not the least important is a moral one, which gets little place in our statement of "objects," and which has, for two years, occupied no part of our time. On, happily, very rare and extraordinary occasions the Society may be called upon to censure and even expel a Fellow, thus exercising moral discipline in a decided manner; but it wisely avoids discussion of such matter, and keeps within very narrow limits the direct exercise of control over its members, leaving this branch of medical police to the Colleges of Physicians and of Surgeons, who have long

taken charge of it. But silence does not indicate forgetfulness or low estimation; and our active juridical interference, concerned as it has been only with minor disorders in individuals, gives no indication of the supreme importance of our moral interests as a Society. In no way can we, or do we, do more good than by increasing and diffusing a kindly spirit and mutual goodwill in our ranks. Nothing contributes more to our dignity and our success than sense of honour and love of truth. By promoting science we increase the weight and power of truth. Without high moral qualities in the practitioner—qualities of heart and of head—the work he does will all be tainted by his imperfections, and correspondingly fall short in its utility to his patients, his profession, and to himself. The intellect may be stored, the judgment may be sound, the hands may be skilful; yet the work does not reach an attainable degree of perfection if the heart is not right.

The promotion of science is avowedly our great object, and accordingly it is our chief performance. The work has been done in previously announced papers and in casual contributions. Of these, some have been purely scientific, or in the view of the mere practical man apparently useless; some have been more or less practical or immediately useful, or intended to be so. We want still a great increase of the at first sight useless kind, and we shall hold it the best evidence of the progress of the Society that they appear and are cordially received. A great master of medical method, Helmholtz, has said that he who pursues science with practical results in view will pursue in vain. The papers combining practical ends with scientific elaboration have been admirable, and must be useful and honorable to us. This Society will always regard such papers as deserving of encouragement, but they need no special fostering care, for the fruits of their application in practice are a sufficient stimulus, sometimes more than sufficient. The more this kind of utility is paramount, the less is scientific severity, and the greater

the departure from the guidance of logic, and consequently the less reliability. A great result, indeed, of our scientific work has been to show us what we should not expect to be able to do, and what we should avoid attempting or doing.

Besides scientific and mixed scientific and practical papers, we have had before us proposals purely therapeutical, and several histories of splendid work in practice. The surgical achievements which find place in our 'Transactions' are as brilliant and wonderful and successful as any to be found in the history of the art. They show what skill guided by science can dare and do, and the novel operations contribute in this and other ways to the solution of important practical problems. That a thing can be done successfully is not enough, however, to show that it should be done. It is not judicious to excise the uterus in elderly women in order to prevent cancer of it. For myself, I have no doubt that the novel operations or series of them which have, in last session, been laid before us, will not be, in any sense, without good fruit, helping towards a sound judgment as to the extent or the limits of their applicability.

It is natural that the ingenious and bold surgeons who devise and execute new operations should press them strongly upon the profession, demanding quick approval, and it is to be lamented that they should sometimes misconstrue the relative slowness or silence of their brethren. Were new therapeutical proposals to be quickly adopted, our whole practice would, by their number and variety, be brought into utter confusion. The silence or slowness of the profession regarding them is a kind and useful reception, for nothing more violent is required to secure for most of them speedy oblivion; while the stronger and better few, surviving, demonstrate their merits and demerits, and secure or lose a place in Medicine. By slowness and silence, even with some active depreciation, the profession obtains the best results, and this without any unnecessary delay. The use and acceptation of a new and good operation

has never been a simple proposal and jubilant reception and should not be; the whole matter must have time to ripen, and the special operation must exhibit plainly its qualities—what it can do, measured against what the corresponding disease does. Sometimes, as when the issue of disease, not cancerous, is in all cases, or nearly all, certain early death, the problem to be solved is a comparatively easy one: death for all *versus* a certain amount of cure. But when there is uncertainty as to the nature, difference of opinion as to the importance, or doubts as to the very existence of the disease to be remedied, the profession does well to be silent and slow. The problem to be solved is a difficult one; and if the operation puts life in the balance, there is a heavy responsibility which demands increased slowness and care.

The history of the operation of ovariotomy is often, one may say regularly, cited as a warning against silence and slowness of recognition; but it is quite otherwise, being a good example of an operation gradually and in due time gaining for itself a beneficent position of eminence. That theoretical and other mistakes were made in opposing it may be very true; and theoretical mistakes made in supporting it too. But these neither hastened nor delayed the adoption of the operation in ordinary practice. As soon as it made a clear and sufficient saving of life it was accepted enthusiastically everywhere, and not till then; and we cannot wish a better fate for any similar proposal. Even now, where there are not skilled ovariotomists, ovariotomy is not an accepted operation: the poor sufferers have life prolonged by avoiding it.

The proposer of a new operation should not expect his brethren to see it in the same light as he does. For him it is gilded, and he jealously guards and promotes it. His judgment of it is that of an enthusiast. The wise practitioner may discommend it, or he may abstain from recommending it; and the proposer is too ready to interpret this conduct as indicating disapproval of him and his bold and original method, while it is really quite consis-

tent with admiration, and even encouragement short of avowed approval. As evidence in favour of it gradually gets strength, so the practitioner at length is justified in making trial of it, and he may at last adopt it; and his slowness, differing as it does from the inventor's wishes, is wise, and not hostile to him.

Proposers of new operations have generally expended much labour, and ofttimes much money, in developing them; and the profession should, and does, admire the zeal and recompense the sacrifice, even though it may reject the operation. But there is often too much expected by the zealous proposer, and too little care taken by the critics, even by those who are essentially kindly, to avoid injury to the natural sensitiveness of such proposers. Against these evils we can only urge the force of moral obligations, which, though possibily too often in the mouth, cannot be too potent in the heart.

I am not quite sure that enthusiasm alone explains the whole peculiarity of attitude of our recent promoters of novel operative proceedings, for it appears to me to be fairly deducible from the tenor of their practice and writings that they do not attach the same value to life as the profession generally. The spirit of the times has great influence on such estimates, as is exemplified in many changes in the conduct of statesmen and jurists, in somewhat analogous circumstances; and it is possible that the profession generally may be induced to come nearer to the views of the promoters of special operations. Meantime, the weight of professional opinion seems to be in favour of the old high regard of the value of life. There is now a demand in connection with this matter, for the combined work of the surgeon and the actuary. Data might surely be obtained which would be sufficient to settle, approximately, the value of life in the diseases calling for tooth-extraction, removing of piles, excision of the mamma, lithotomy, oöphorectomy, ovariotomy, hysterectomy, and others; and, on the other hand, the danger of the operations themselves: and from the two results, viewed in the

light of established professional practice, might be deduced a scale of justifiable or of ordinarily incurred risk which might facilitate and corroborate judgment as to the due proportion of danger in new operations. Already some limited computations of this kind have been made, but they have been done by special pleaders and are insufficient.

A well-conducted inquiry would lead to conclusions which might, on the one hand, diminish our estimate of the value of life, or increase our estimate of the importance of mere chronic ailing; or the inquiry might confirm the opinions on these subjects which are at present generally held. We might thus be able, with great assurance, to judge whether or not a mortality of one in five or one in twenty is to be encountered in an operation for the relief of mere chronic ailing; and so on, according to the gravity of the ailing or the danger to life arising from the disease.

Before leaving the chair, which I have with much pleasure to myself occupied for two years, and to which you have elected a gentleman who is both well known and highly esteemed, an experienced practitioner, a respected teacher in a great school, whose name is familiar to all who take an interest in our proceedings, I give heartfelt thanks to the Society. It is a matter of course that I appreciate fully the honour of presiding over the largest association ever devoted to the objects which I have during my life pursued. I also value very greatly your kind consideration and the uniformly cordial support which you have afforded me in the performance of my various duties.

It was moved by Dr. POTTER, seconded by Dr. CLEVELAND, and carried by acclamation, "That the best thanks of the Society be given to the retiring President, Dr. Matthews Duncan, for the efficient manner in which he has presided over the meetings of the Society during his term of office, and that he be requested to allow his

interesting address to be printed in the next volume of the 'Transactions.'"

It was moved by Dr. AVELING, seconded by Dr. JAMES, and carried unanimously, "That this meeting desires to express its best thanks to the retiring Vice-Presidents, Dr. J. Bassett and Dr. John Williams, and to the other retiring Members of Council, Dr. Ford Anderson, Dr. C. H. Carter, Dr. Lloyd Roberts, Mr. F. W. Salzmann, Dr. Brodie Sewell, Mr. Edward Taylor, and Mr. Frederick Wallace."

MARCH 7TH, 1883.

HENRY GERVIS, M.D., President, in the Chair.

Present—56 Fellows and 9 visitors.

Books were presented by Mr. Alban Doran, Dr. G. B. Ercolani, Prof. H. Fritsch, Dr. E. Jenks, Dr. E. Noble Smith, Dr. Valenta, and St. Bartholomew's Hospital.

John Coryton Roberts, L.R.C.P. Edin. (Peckham Rye); was declared admitted a Fellow of the Society.

The following gentlemen were elected Fellows of the Society:—Raheem Buksh, M.R.C.S. Eng.; Patrick John Cremen, M.D. (Cork); Henry Roxburgh Fuller, M.R.C.S. Eng.; Theophilus Hoskin, L.R.C.P. Lond.; Robert Edward Inman, M.R.C.S. Eng.; Percy S. Jakins, M.R.C.S. Eng.; Richard Unthank Wallace, M.B.

The following gentlemen were proposed for election:—Robert John Allen, M.R.C.S. Eng.; John Edwin Cooney, L.R.C.P. Edin.; John Gordon, M.D. (New Cross); and Robert Percy Middlemist, L.R.C.P. Lond.

CAST OF FEMALE BLADDER.

By Dr. J. H. AVELING.

THE patient from whom this specimen was obtained was delivered of her first child on Sunday, Dec. 4th, at 2

a.m. The labour, which had continued for eighteen hours, was terminated by forceps.

On Monday, Tuesday, Wednesday, and Thursday it was noticed that the urine was not passed properly, that it dribbled away, and that the abdomen was enlarged.

On Thursday evening a catheter was passed and a quantity of dark, thick, offensive urine drawn. After this the catheter was used three times a day and warm water and Condy's fluid injected.

Three weeks after the confinement, something in the bladder causing obstruction to the flow of urine through the catheter, the urethra was dilated, when a rush of water took place and a white membrane appeared at the orifice of the urethra. This was carefully extracted and is now exhibited. Mr. Sutton, who has kindly examined it for me, says the exfoliation involves only the mucous membrane, and that he finds no muscular tissue.

Fortunately these specimens are rare. I believe only one has been previously shown to the Society by Sir Spencer Wells in 1861, and with him I may trust that the "lesson may not be lost."

It is fifteen months now since the patient was confined, she is pregnant and in fairly good general health. She has, however, continuous incontinence of urine and a recto-vaginal fistula, for the cure of which she was sent to me by Mr. Warren Tay.

Mr. WALTERS (Reading) had seen a somewhat similar case. He was called in consultation to a woman four and a half months advanced in pregnancy, whose uterus had been retroverted for four days, with retention of urine. He succeeded in replacing the uterus, having previously with a catheter drawn off about three pints of most offensive urine loaded with pus. He ordered a catheter to be passed night and morning, and the bladder to be at the same time washed out with a weak solution of carbolic acid. Five days after the replacement of the uterus she was seized with violent pain in the bladder with constant urgent desire to pass water, and one or two small shreds of membrane came away. The next day she passed, apparently, the whole of the

vesical mucous membrane. The woman did perfectly well, was delivered at term of a living child, and has had no subsequent vesical treatment.

FIBROID TUMOUR OF THE OVARY REMOVED BY ABDOMINAL SECTION.

Dr. John Williams showed a fibroid tumour of the ovary removed by abdominal section. The subject of it was a young girl 18 years of age. She had enjoyed good health but she was always larger than other girls. She was of fair complexion and well nourished. She had suffered no pain in the abdomen and the growth had been rapid during the past year, especially during the last six weeks. She had gained flesh during the last few months.

The patient began to menstruate a year ago and had been regular since, except that she missed the last catamenia due.

The abdomen was accompanied by a large solid tumour extending up to near the ensiform cartilage, it was slightly moveable. Her nterus was freely moveable, normal in size and position; sound entered two and a half inches.

The abdomen was opened in the middle line extending from a point an inch above the pubes to a point two inches above umbilicus. There was no adhering, and the pedicle, which was wide, short and thin, was transfixed and tied in the usual way. The operation was performed under antiseptic precautions. The patient made an excellent recovery.

The tumour consisted of a large pear-shaped mass, the stalk of which was represented by a thin pedicle about four inches long, and consisting only of the broad ligament, *i.e.* the anterior and posterior layers of peritoneum with intervening fibrous tissue and blood-vessels.

The tumour measured about eight inches in diameter at its thickest part and presented a smooth surface, which

was slimy in places as if covered by epithelium. It was everywhere firm to the touch, but some places appeared softer than others.

The colour of the exterior was variable, for the most part of a yellowish-white tint, but large areas were of a yellowish pink colour, and in a few places was bright red from dilated vessels.

On section the tumour appeared to be made up of numerous interlacing bands of fibrous tissue, this being densest in the centre and forming a kind of capsule over the whole surface of the growth. While the larger part showed the ordinary appearances of fibrous tissue there were many areas which were soft and occupied by a gelatinous tissue evidently mucoid. These patches consisted of delicate fibrous trabeculæ enclosing the gelatinous mucin in a semi-fluid state for, when the tissue was scraped, a viscid clear fluid escaped which gave a white stringy precipitate with water and also with alcohol.

The trabeculæ of fibrous tissue in the growing margin of the growth had a deep red tint, and the same colour was noticed as well in parts of the centre.

In addition to the appearances already described, the fibrous tissue presented extensive *calcification* in the centre of the growth. This condition presented itself as irregular spicules, most frequently found in the neighbourhood of the blood-vessels, but forming on the whole a central mass with radiating trabeculæ.

Blood-vessels.—The blood-vessels commencing at the hilus ran throughout the tumour in loose sheaths of delicate connective tissue, but their walls presented normal appearances, even in the smallest branches, the sides of which were not simply the sides of channels hollowed in the tumour substance. The veins were large and patent.

Lymphatics.—An attempt was made to inject the lymph vessels (?) of the tumour by the puncture method without success, and as also staining with nitrate of silver failed to show anything else than a plexus of fibres, it may be concluded that it contained none.

Microscopical appearances.—A section taken at the growing border showed simple white fibrous connective tissue and the same could be found running down as trabecular sheaths around the blood-vessels. The bundles of fibres when teased showed the fibres to be all similar to normal white fibres of connective tissue but with the exceptional characters of being scarcely wavy at all, of being homogeneous bright with a high refractive power and showing no transverse bands or constrictions.

The fibres had in many cases an irregular outline, but in others the sides were parallel, and the edge sharply defined. Although not wavy the fibres were blunt and curled, as though closely resembling elastic fibres but elastin could not be proved to be present by the ordinary reagents.

There were excessively few corpuscles to be seen anywhere. Where present they were flattened cells resting between the planes of fibrous tissue.

The walls of the blood-vessels were composed to an unusual degree of connective tissue, but were otherwise normal.

The calcification was present as irregular clear crystalline plates just as though the ground substance between the fibres had become calcified. The calcareous plates became merged to form spicules, and here and there showed small dark points (pits), and in a few places a connective tissue corpuscle was involved; but the space was not a normal lacuna and there were no canaliculi.

The growth was therefore a calcifying fibroma of the ovary, a tumour of not uncommon occurrence in the lower jaw, but, so far as I know, of considerable rarity as occurring in the ovary.

The PRESIDENT said, fibroid of the ovary being undoubtedly rare it would be interesting to hear some of the patient's clinical history from Dr. Williams.

EXHIBITION OF SPECIMENS.

By Dr. Granville Bantock.

The first specimen I have to exhibit is a small dermoid cyst of the right ovary which I removed from a widow, æt. 32, the mother of two children. I have thought it might interest such of our Fellows as may not have seen an example of this form of tumour, containing teeth and hair. The cyst was filled with the usual characteristic sebaceous matter.

The second specimen consists of both the Fallopian tubes with the right ovary, and affords an example of the condition which is known as hydro-salpinx or dropsy of the Fallopian tube. The left tube formed a tumour as large as a cocoanut, which occupied the left side of Douglas's pouch, where it was firmly bound down and gave rise to great suffering especially when the bowels were moved. It was so tender that the patient could hardly bear any examination. In removing it I had to empty it of its contents by aspiration to enable me to apply the ligatures. The ovary was so bound down that I could not remove it. The right tube was as large as a hen's egg and was readily removed with the ovary. The contents were thin and watery, resembling the washings of tea leaves, and presented microscopic elements in the form of epithelial cells derived from the lining membrane.

I have now to show you a series of five fibroid tumours of the uterus, removed by abdominal section, constituting the operation of hysterectomy—variety supra-vaginal.

1. This specimen was removed from a single woman, æt. 39, who had suffered more or less during the last two years. It had grown very rapidly in the last six months, and had caused her so much suffering that she could no longer earn her living as a pattern-card maker. Menstruation was irregular and scanty and had never been abundant. The operation was rendered very difficult by

the adhesion of the omentum to the whole anterior and superior aspects of the tumour, as well as to the parietes. I could not find any trace of either ovary. The tumour weighed 7 lbs. 9 oz.; on its superior aspect it presents a cavity, of the capacity of about 2 oz., and is a good example of commencing cystiform degeneration.

2. Obtained from a married woman, æt. 45, who had suffered for two years. Menstruation was regular, rather excessive, lasting seven or eight days, usually with clots, but without affecting her general health. Latterly the pain had become so severe that life had become intolerable. This was explained by the extensive adhesion of the omentum both to the tumour and parietes, as in the preceding case. The operation was very difficult from the extent to which the uterine body was involved, and such was the drag upon the stump that I could not prevent extensive sloughing of the skin under the supporting transverse pins. I could not find any trace of the right ovary. The site of the left was occupied by a cyst containing half a pint of fluid, which was removed by aspiration. The cyst itself was so bound down that I could not remove it. In the cavity of the uterus were two soft mucous polypi, one as large as a broad bean. Weight of tumour 2 lbs. It consists of the fundus of the uterus with numerous fibroids, and one constituting more than half the mass, growing out from the right side.

5. Removed from a married woman, æt. 44, the mother of four children. The tumour presented the characters of a multilocular ovarian tumour with colloid contents, and even now its elasticity might be mistaken for fluctuation. This was due to œdema which also affected the broad ligaments. The right ovary was ligatured separately. The tumour was of rapid growth, having existed only six months, as far as the patient was aware. It weighed 4 lbs. 6 oz. The menstruation was regular and rather scanty.

I have taken the specimens out of their chronological order, because a peculiar interest attaches to Nos. 3 and 4.

3. The patient from whom this specimen was removed

was a single woman æt. 41. In April, 1881, she came under my care suffering from such excessive menorrhagia that she was in a state of profound anæmia. At that time the operation of removing the ovaries and appendages was occupying a great deal of attention, and the relations of the growth to the uterine body and cervix were such that I dared not contemplate the radical operation, and I therefore performed Battey's operation. Within forty-eight hours metrostaxis set in and lasted four weeks, at times very severe. At the end of this period such a change had taken place that, whereas the uterus with its tumour reached to the umbilicus and the sound passed for about eight inches, it was now midway between the umbilicus and pubes, and the cavity measured only four inches. Such was the extent of the metrostaxis that nearly seven weeks elapsed before she could leave the hospital. Within the next month the hæmorrhage reappeared, and before she returned home I had the mortification of finding that the uterus was as big as ever. For twelve months she held her own fairly well, and although the hæmorrhage recurred with great regularity, it was not so free as formerly, but gradually it became more abundant and more prolonged, and she began to go back. It will give you some idea of the extent of this hæmorrhage when I tell you that from the beginning of November till the middle of January it never ceased, and at times was very severe. Under these circumstances I had no hesitation in recommending the removal of the tumour, although I had staring me in the face a note appended to the former operation, viz. that "the removal of the tumour was impossible;" for I had in the meantime learned how to treat these cases. The operation was not difficult, though it was not facilitated by the shortening of the broad ligaments by the previous one. Mark the great size of the uterine cavity, the enormous thickness of the uterine wall, and the condition of the tumour, which furnishes a good example of what I call *cystiform* degeneration in an early stage. Weight of tumour 3 lbs.

4. This specimen was taken from a widow, æt. 48, the mother of one child. About a year ago she was under the care of a distinguished surgeon of Birmingham, who removed the ovaries and appendages. She came under my notice in November last complaining of a tumour in the abdomen, which caused her so much suffering that she could not follow her occupation of housekeeper. This tumour was as large as the head of a new-born child, and adhered to the greater part of a cicatrix of about six inches in length. The operator was good enough to tell me what he had done. At the patient's urgent request I removed the tumour, which she was positive had not decreased since the former operation; on the contrary, she was inclined to think it had increased. There was also this remarkable fact that, whereas menstruation had been very moderate before the operation, it had actually increased since, both in duration and quantity. The tumour weighed 2 lbs. 3 oz.

It may be within your recollection that, when, three months ago, I had the honour of showing a similar series of tumours, I stated that whatever might be the future of oöphorectomy in the treatment of fibroid tumours, it could not come into competition with hysterectomy in such cases as I then showed; for while in some of the cases the ovaries could not be removed at all, in others it would have been the height of folly to leave behind after removal of the ovaries, a tumour which was bleeding from a great part of its surface through the breaking down of adhesions, in yet others the tumour had already begun to undergo cystiform degeneration—a condition which is as surely fatal as the ovarian cystoma.

In the discussion which followed one of the speakers gave it as his opinion that hysterectomy ought not to be done until oöphorectomy had been tried and had failed. That is a proposition which to my mind is both unscientific and irrational. It is unscientific because it refuses to take notice of facts already known and of failures that have been already met with. It is irrational because it is

always unwise to draw a hard and fast line in such a case as this. But I must not dwell on this point.

Great stress has been laid on the importance of securing the ovarian arteries in Battey's operation. Even if this were possible in all cases—and I am far from saying that it is—what do we gain? It seems to be forgotten that the uterus is supplied by one uterine and one ovarian artery on each side, and that the uterine is the larger of the two. It seems to be forgotten that there is such a thing as a compensating law of nature, by which, when of two sources of blood supply one is cut off, the balance is restored through the remaining channel. The experiments of Hunter on the growing horn of the stag, and the practice of surgeons in the case of aneurism, show that this is true in the case of collateral circulation. And if it be true in the case of collateral circulation, how much more likely is it to be true in the case of direct supply.

I have only to add that all these patients have either recovered or are convalescent, that of twenty-two cases of hysterectomy treated by the extra-peritoneal method in the manner I have on a former occasion explained, twenty have recovered, and that in not one of these has the operation been done with what has been called "full antiseptic precautions."

Mr. KNOWSLEY THORNTON said, the two cases in which removal or partial removal of the uterine appendages has been performed are most beautiful evidences of the value of this operation. I say partial operation advisedly with regard to the first of them, because I was present at the original operation, and I was present again at the hysterectomy, and examined the tumour immediately after its removal. The right ovary was imperfectly removed, and I saw during the hysterectomy that a portion of the left ovary still remained, half bedded in the side of the tumour. It was then a very imperfect öophorectomy, and yet we see that the tumour is atrophying and going through those degenerative cystic changes which we aim at in performing this operation of removal of the uterine appendages. I have shown, by one of my cases, that this operation will cure that usually troublesome disease, true fibro-cyst of the uterus. But in this specimen we have

not to consider this disease, the cysts are merely part of the process of degeneration and absorption, which the original operation was designed to produce. We are told that the patient had recurrence of hæmorrhage, and prolonged weeping from the uterus, and this is just what we should expect with the ovaries partially removed, and their remains kept in constant irritation by the presence of silk ligatures in their substance. All we know of metrostaxis tends to show us that its great inducer is ovarian irritation (*i.e.* irritation of the ovarian nerves). We see this with the nerve tension from growing follicles in menstruation. We see it in the hæmorrhages following quickly upon the removal of the appendages. We see it after removal of one ovary, as in ovariotomy; and we see it still more strikingly in cases in which an elderly woman, years after the menopause, grows an ovarian tumour, almost the first symptom is metrostaxis, coming at more or less regular intervals, and continuing while the tumour is small, and ceasing when the ovary is destroyed and turned into a large and easily recognisable ovarian cystoma. Metrostaxis and weeping from the uterus are by no means things to complain of after removal of the appendages for the cure of fibroid. They are a part of the cure, and my experience has shown me, that cases in which they occur cure most rapidly. I cannot speak with the same certainty as to the nature of the first operation in the second case, as I did not see it; but I was present at the hysterectomy, and seeing the tumour it appeared to me that the removal of the appendages had been imperfect as regards one tube and one ovary. This tumour is also evidently atrophying though more slowly, because it was receiving a considerable blood supply from adhesions to the cicatrix and omentum. I claim these two cases, then, as giving an excellent illustration, and one which I trust we are not likely to have frequent opportunities of seeing, of the value of the operation of removal of the uterine appendages for fibroid. Thereby seeing these two patients as I did upon the operating table, I am perhaps not in a very good position to judge of their health, but certainly patients do not usually look their best just before operation, and these women appeared to me to be in excellent health; they both had fair colour, they were both rather stout than thin, and were evidently well nourished; their abdomens were distinctly flaccid, showing that they had been more distended at some previous time. I would ask then, with all the evidences which we have before us, that the first operations were surely, if slowly, fulfilling their purpose, what justification did the condition of either of these women afford for again putting their lives in danger by so serious an operation as that of hysterectomy? I at any rate cannot find evidence of such justification in what we have been told about them. They are recovering, and so far it is well, but they can hardly be said to be convalescent while they have large suppu-

rating wounds at the site of the pedicle. Will their condition twelve months hence be one of greater comfort than it would have been if they had been advised to have a little patience, and await the full benefit to be derived from the first operations? I admit that the operation for removal of the uterine appendages is often a very difficult one, and one requiring considerable manipulative skill, but it is a safer and more conservative one, than the more easy one of hysterectomy, which simply consists in dragging uterus and ovaries out of the abdomen, and fixing the stump with a wire and pins in the cicatrix; a return to the clamp principle, which has so deservedly and universally fallen into discredit in ovariotomy. Is a woman more unsexed by the mere remova of the uterine appendages, with her uterus remaining of its normal size and in normal position, or by a clean sweep of ovaries, tubes and body of uterus, with the cervix dragged up and fixed in the abdominal cicatrix, and very likely in addition a permanent fistula, or the life-long misery of a bad ventral hernia? Replying later to some remarks by Dr. Savage, Mr. Thornton pointed out that his remarks as to the justifiability of these operations, merely referred to the two special cases, and that he did not positively say that they were not justifiable, but asked for further grounds of justification than had been given.

Dr. SAVAGE said his notion of "justifiable" as applied to surgical proceedings was, that when the disease rendered the patient's life intolerable a surgical operation not essentially fatal was justifiable. This was the condition in Dr. Bantock's cases. The surgical proceedings he adopted resulted in curing 20 out of 22, mortality 1 in 11. Ovariotomists rejoice in success of one in ten. What better proof could there be justifying Dr. Bantock's operations? Dr. Savage regarded Battey's operation—not that for the removal of diseased tubes and ovaries—as detestable.

Mr. DORAN observed that the relative merits of öophorectomy and hysterectomy for fibroid must henceforth be judged by statistics of the operations which have been performed and which will be performed; for it is evident that the advocates of the two different operations are determined to continue to act as they have hitherto acted and feel fully justified in so doing. It only remains for others to watch these operators and to judge from results, as it is now quite useless to protest against either operation on abstract grounds, since no protest will check the zeal of the operators. Before either operation becomes established, like ovariotomy, we must hear much fuller details of the experiences of experts. Öophorectomy, in a case of fibroid disease of the uterus, is not an easy operation, the ovaries are difficult to reach and to draw up into the abdominal wound and the pedicle is far harder to secure than in an average case of ovariotomy, and very complete anæsthesia is of paramount importance throughout the operation. Yet, with practice, the total removal of each ovary and

the secure ligature of its vessels might be, in most cases, insured. Removal of the diseased uterus is, on the other hand, a more thorough measure, and it must be remembered that the organ is useless in these cases, as well as troublesome. Comparisons of long series of after-histories are needed before the profession can say authoritatively that either, both, or neither of these operations are justifiable.

Dr. ROUTH said he was sorry to see altercations in the discussion. The objects of this Society were the progress of science and truth, not recrimination. He took exception to Mr. Thornton's remarks. He had said that öophorectomy was the operation which should have been performed in two of Dr. Bantock's cases, not hysterectomy. Now he (Dr. Routh) believed that öophorectomy was (except as a *pis aller*) a shameful, often useless operation. Objection had been taken in older times in this Society to clitoridectomy because it unsexed a woman. But clitoridectomy could scarcely be said to have this effect, for women bare children afterwards, but öophorectomy completely unsexed a woman. Then in this very Society cases had been detailed where öophorectomy had completely failed to cure the sufferer, and death also had resulted. Mr. Thornton had said the cutting away of the appendages and ovaries in Dr. Bantock's last cases was *imperfectly* done. It seemed scarcely kind, and we should need some further evidence before we could assume that Dr. Savage, of Birmingham, and Dr. Bantock, had not succeeded because they did not do it as completely as he, Mr. Thornton, wished it done. Then it was well known that during the climacteric period, and after, fibrous tumours often disappeared. One of these women was forty-one, the other over fifty. Even supposing there was atrophy already begun in the tumours, which was questionable, how much was due to change of life, and how much to the öophorectomy? The experiment to be crucial should be performed in women in full sexual power, and in such was it justifiable? In any case, these women before the hysterectomy were bleeding incessantly, great invalids, confined to their beds, unable to work for their living, and a continual drag upon their poor relatives. Now they were healthy, strong, able to go about, and useful members of society. Who could dare to say then that the operation was not justifiable?

Dr. WYNN WILLIAMS stated that two of the specimens were removed from patients whom he had sent to Dr. Bantock for operation. They had been under his care for many months and had become quite incapacitated through pain and suffering of which they were now relieved. If that is not sufficient justification for the performance of the operation he did not know what was.

Dr. BANTOCK, in reply, said, Mr. Thornton contends that in these two cases of double operation hysterectomy was

unjustifiable, that the lives of the patients were unwarrantably exposed to peril. I think I have already justified the operation sufficiently; in my own case the hæmorrhage had become so serious that the patient was not only a hopeless invalid, going from bad to worse, but was also a source of great anxiety to her friends. If that is not a justification of the operation I should like to know what is. I protest against the course pursued by Mr. Thornton. Mr. Thornton says that, having been present at the operation, he could assert that I did not perform the operation as it should have been done. Well, sir, I am not here to defend or speak of my own skill. Perhaps I did not do the operation properly. But when Mr. Thornton says that the tumour—which he has never had an opportunity of examining—is in a state of atrophy, he asserts that of which the case presents no evidence. The specimen fails to show, on the most careful examination, any trace of either ovary, and only a small portion of the uterine end of one of the tubes. If we take the evidence of the specimen, then, we must believe that the operation was well done. It is not my province to defend Dr. Savage—whose name I had not mentioned but Mr. Thornton has correctly given—but seeing the large experience he has had of this operation, I think we may safely take it for granted that he did it well. And, as in my own case, an appeal to the specimen confirms this. I maintain, then, that complete justification has been shown.

Dr. Wynn Williams exhibited two specimens of tumours removed from the uterus by the ecraseur. The first, an ordinary fibroid tumour, removed Feb. 22nd from a woman, æt. 48; youngest child fifteen years of age; six months ago had a severe flooding and has had more or less hæmorrhage ever since, her colour having become perfectly yellow.. The second was removed on the same day from a woman, æt. 35, her youngest child three years of age; she was a patient at the Samaritan Hospital three years ago, under Dr. Routh. This tumour is of a particularly soft, flabby character and was found more so on removal before it had been placed in spirit and would appear to be a large mucous polypus intermixed with fibroid tissue, indeed it was so soft that until an incision was made into it, there was some doubt as to whether it contained fluid or not. It is in two portions, and was removed on two

separate occasions. The first portion protruded through the os uteri and had its attachment within the os to fully two thirds of its circumference. After the removal of the first portion another portion protruded through the os which was removed on the 6th of March. This portion was also particularly soft, and has a fleshy, mucous-looking covering. Several portions had to be removed by torsion and cut away with the cautery knife. It should be mentioned that when the patient was under the care of Dr. Routh there were some doubts as to whether or not it was an inverted uterus. It was not until after the application of Dr. Aveling's instrument that it was diagnosed to be a fleshy or mucous polypus.

Dr. ROUTH.—In regard to Dr. Wynn Williams's case, this point of interest should not be lost sight of. When he (Dr. Routh) first saw her, the polypus projecting was *attached all round* the os, and diagnosed by three colleagues as inversion of the uterus. It was only after Dr. Aveling's instrument had been used a day, that the adhesions gave way on one side, and that the sound could be introduced and the case accurately diagnosed.

The PRESIDENT then delivered his Inaugural Address.

INAUGURAL ADDRESS.

GENTLEMEN,—When some four-and-twenty years ago, within the first year of our Society's existence, I was admitted to its Fellowship, few things could have occurred to me as less likely to happen than that at some future day I should be chosen to its Presidency. And in taking the chair this evening, and returning you my best thanks, I can but say that I am at once very sensible of the honour conferred, and very conscious of my own inadequacy. Indeed, since a few weeks ago, when by your kindness I was elected, the voice of an inward monitor has many times whispered in my ear the question, "Amice, quomodo

huc intrâsti?" I am reassured, however, by the remembrance that for more than eighteen years I have known nothing but consideration from the Fellows of the Society in the other offices I have had the honour to hold, and that I can confidently rely on the cordial assistance of our experienced Secretaries, of the distinguished men who have preceded me in this chair, and indeed of every Fellow of the Society. We are all fellow-workers for a common object; the success of our Society and the promotion of obstetric science is our common aim. The establishment of our Society in 1858 began, without doubt, a new era for obstetric medicine in this country. It was previously scarcely looked upon as a science, but regarded rather as an art, and as an art even in which but a rough kind of skill was required. Its teachers were passed over in the distribution of professional honours, and its practitioners thought of as of a somewhat inferior rank. Now, thanks largely to the work and enterprise and success of our Association, matters, though still not all we could wish, are distinctly brighter. Much of the work done by Fellows of this Society is recognised on all hands as of high scientific merit as well as of great practical value. One testimony, which struck me at the time as gratifying, recurs to me in connection with this room. On the occasion of Mr. Wells giving to the Royal Medico-Chirurgical Society the particulars of the 200 cases of ovariotomy which completed his roll of 1000 cases, the then President, Mr. Erichsen, after referring in terms of high eulogy to the great success of Mr. Wells, went on to say, "And surgeons are yet more indebted to obstetricians for other great improvements in operative surgery, for it is to them we owe the great precautions which, independently of antiseptic or Listerian methods, have tended to lower the mortality of ordinary surgical cases." And, as an outcome of our work and its success, I think I may venture to say our professional status is, moderately perhaps, but yet distinctly, improved. A surgeon whose chief eminence is in connection with gynæcological work is President of his

College. An obstetric physician was not long since President of the Royal Medical and Chirurgical Society; and it is rare that the Council of the College of Physicians does not now contain one or more representatives of obstetric medicine. It may not be uninteresting in this connection to mention a recent decision of the Senate of the University of London. It has been customary for the gold medal given at the M.D. examination to be awarded to the candidate who, in addition to possessing the highest marks in his other subjects, wrote the best commentary on the case in medicine, to the exclusion of those candidates who, however well they did in the rest of the examination, selected for comment the case in obstetric medicine. At a recent meeting of examiners this injustice was referred to by your late President and myself; and I am pleased to say that, on the representations of the Registrar, who himself coincided with our view, the Senate has decided that in future the case in obstetric medicine and the case in medicine shall rank as of equal value in the competition for the medal. At the meeting inaugurating this Society, Dr. Tyler Smith, whose name can never be referred to by us in this room without emotions of sincere and grateful regard, thus expressed himself: "The chief business of an obstetrical society would be to diminish the mortality of childbirth, and the task was one of the highest importance." And at the first annual meeting, a few weeks afterwards, our first President, Dr. Rigby, said: "The great object, and that which will form the great strength and importance of this Society, is the collection of valuable facts on questions of obstetric practice." And I think I may venture to assert that if this evening, at the beginning of the twenty-fifth year of the Society's existence, we take a retrospective glance at its work, we shall find that it has very distinctly furthered these two well-defined aims—the advancement of knowledge and the abatement of mortality. It would be an onerous task, and perhaps an invidious one, to refer specifically to the many communications which have conduced to these ends. Every

session has piled the heap higher, and it forms now a mass of work of which we may be legitimately proud. But it may be permitted to refer for a few minutes to the two great debates of the Society on the subjects of puerperal fever and the use of the forceps, in both of which, and particularly in the former, additions of the greatest moment were made to our knowledge, and so to our power. I think I may fairly assert that up to the period of the debate on puerperal fever the most diverse views as to its etiology were taught, and in its treatment the most varied practice followed. One authority held that any fever occurring in childhood became *ipso facto* puerperal fever, whether that fever were typhus or typhoid or scarlatina. Another, equally distinguished, looked upon scarlatina as of the essence of puerperal fever, or at least as its most frequent and important factor. Another, that the fever was but the result of the local inflammatory changes going on in the pelvis and abdomen. Another, regarding a local incident in its pathology as the disease itself, believed that puerperal fever was primarily and essentially a diphtheria of the vagina and endometrium, spreading thence to the system through the lymphatics, or to the peritoneum along the tubes. And yet another, that puerperal fever was a specific fever developed by the crowding together of puerperal women, and producing a specific poison, which by conveyance could communicate puerperal fever, and puerperal fever only, to other lying-in women. But so marked a change followed the collation of facts and comparison of views which occurred in this debate, that in nearly every text-book which has been issued since the subject of puerperal fever is treated simply, and as if it were a matter of course, under the title puerperal septicæmia. That many problems in connection with it yet remain to be unfolded is, however, certain; and while the general outline of the picture and many of its details, are clearly depicted for us, much in the filling up of the canvas remains for the skilled pencils of Fellows of this Society. One point deserving at least a passing word is this. Just as under

the head puerperal fever numerous distinct febrile conditions were formerly grouped together, so probably has been the case also under the designation puerperal septicæmia. This term should obviously be limited to the infection of the system by septic fluids in which micro-organisms capable of self-multiplication are found. This has indeed been insisted upon, from one point of view, by our late President, in the distinction he draws between septicæmia and the condition he terms "sapræmia," in which he believes the poison to be chemical, and not a living ferment. But probably over and beyond this the subject is in need of elucidation. Another point on which I would venture a remark is the connection between scarlatina and puerperal fever. A former President of our Society, and one whose work is always of the ablest, has shown how frequent that association is. But if, as we believe, puerperal fever proper is puerperal septicæmia, the mere communication of scarlatina cannot induce puerperal fever in a lying-in woman without it in some way initiates septic changes. If a puerperal woman has scarlatina after her labour, and shows no evidences of septic poisoning, no parametritis, no peritonitis, no distant trouble in her lungs or brain, I think we may fairly say she has scarlatina and nothing more. But if, in addition to a scarlatina rash and a scarlatina sore-throat, she has such septic manifestations, we might with equal fairness say she has both—the one complicating the other; and indirectly it may be the one accounting for the other. Now, on the one hand, scarlatina in one patient may indirectly be the parent of puerperal fever in another, through the medium of the septic discharges which occur from sloughy surfaces in the throat or nose or ear; and, on the other, if the patient herself develope scarlatina symptoms, the occurrence of the exanthem may induce in her acute vaginitis or endometritis, and so originate inflammatory discharges, which, becoming septic, may graft by auto-infection septicæmic symptoms upon those of the primary scarlatina. Were the connection closer than this, it appears to me it would

be scarcely possible for general practice to be carried on. One other point to which attention has not perhaps been generally given, but which seems to be of much interest in connection both with the etiology and prophylaxis of metria, is the virtual predisposition which exists in the puerperal woman to septic invasions. Her blood being in a watery state with lessened albumen and increased fibrin; her nervous system worn by the anxieties and discomforts of gestation; her glandular system faulty, and its capacity to eliminate diminished; her general physical strength lowered by the effort involved in the maturing of her offspring, and by the various pathological incidents which accompany pregnancy—incidents, in their bearing on her general health, described with characteristic brilliancy in his Lumleian Lectures by Dr. Barnes—it is matter for little surprise that she resists toxic agents so inefficiently. One may almost say, indeed, that this condition of system presents a special predisposition to the reception and development of infective maladies; and explains also the recognised importance of a woman's health being at its best when she enters upon the ordeal of labour. That the establishment of the present view of puerperal fever has well fulfilled the chief object of this Society as defined by Dr. Rigby—"the lessening of mortality in connection with childbirth"—is abundantly true. We now know precisely what to do to avert or lessen the risk of communicating contagion; and we also know what to aim after in the treatment we adopt for the developed malady, although we must add that as yet, unfortunately, our prophylaxis is much ahead of our powers in actual treatment. We know with certainty how to lessen the risk of injection, by antiseptic precautions, and the proper management of the third stage of labour; but when infection has occurred we as yet lack that intimate knowledge of the poison which would enable us at once to neutralise or destroy it, and our efforts can only be directed, though often with encouraging success, to the maintenance of strength, the promotion of healthy function, and the control of the

several local lesions which arise with the propagation of the poison and the progress of the case. The application of the principles of antisepticism to midwifery, which is at once the note and indication of our advance in prophylactic care, is, without question, the greatest of all the recent advances in our art. And it is equally influential in the domain of operative gynæcology. We undertake our operations now as we enter upon our midwifery attendance, with the assurance that by scrupulous attention to antisepsis we can all but eliminate the most potent element of danger. The importance, again, of the proper management of the third stage of labour is also very largely in virtue of its promotion of antisepsis. The efficient contraction of the uterus, by checking hæmorrhage and expelling clots and decidual fragments, lessens at once both the channels and sources of possible auto-infection. The debate on the use of the forceps covered a less wide field, but its influence was equally for good; and it is now the accepted view of the profession that where the need exists —and it is part of our education and duty to learn and to teach the indications of that need—delay in using the forceps is not less harmful than inefficiency in their application.

But although so much has been done by debate and communications and discussion much still remains to do. Is it not a reproach to us, for example, that after the frequent consideration of such a subject as uterine flexion we are so little agreed as to its etiology, its pathology, its influence, or its treatment? Can it be with satisfaction that those of us who teach have to tell our classes that, while some authors of distinction hold that flexions are at once the most frequent and important of uterine maladies, others equally able speak of them as though certainly common, of minor significance, nay, as often but "the condition of equilibrium of the woman's pelvic viscera, and a constituent part of her comfort and health"? Surely it should be possible to ascertain the truth in so everyday a question as this! May not this difference of opinion

arise from some such error as led to the fabled quarrel about the colour of the shield, and illustrate the truth that both disputants may be right, each from his own point of view; that the shield, in fact, now as then, has both a golden and a silver side; that the one observer has noted chiefly cases of flexion with symptoms, and the other cases without, or in which the symptoms directly following from the flexion were few and unimportant? Or may there not be some ground common to both, and explanatory of the divergence, and this be possibly what I once ventured to suggest in a discussion on the subject in this room, that flexion *per se*, flexion as flexion, was of minor consequence unless associated with obstruction; that it was the virtual obstruction produced by the flexion which led to a certain chain of events—menstrual retention, endometritis, uterine hyperæmia, and its various epiphenomena? Or again, when one observer speaks of obstructive dysmenorrhœa as a definite malady, depending on cervical stenosis, and capable of cure by dilatation or division of the cervix and another equally eminent denies even the existence of obstructive dysmenorrhœa, and so logically enough repudiates all surgical interference for its cure, there must surely be some explanation possible of the divergence. Either our definitions must be faulty, or the cases referred to by the several authors are only superficially and not really similar. What, indeed, we appear to be in want of on many points is, if I may venture to use two Greek words, ἐπίγνωσις in contradistinction to γνῶσις simply; a more precise and definite knowledge in place of a knowledge which is vague, uncertain and often rather traditional than true. Or possibly our failures arise rather from the lack of that quality which by a distinguished writer has recently been denied to us as a nation —the quality of "lucidity." But whichever of the sister tongues best describes our need, whether it be of accurate knowledge or clear expression, I fear we cannot shut our eyes to its existence, and how best to meet it is a matter for gravest thought. Debate, apparently, does not always

succeed: sometimes, indeed, it seems as if it did but accentuate differences. Possibly, the more frequent appointment of committees to receive evidence, sift cases, conduct investigations, and prepare reports for transmission to the Society, might do something, and perhaps much, towards settling some of the points on which these differences of opinion exist—differences of opinion from which, I am afraid, our clients and ourselves must both necessarily suffer. The principle of collective investigation, again, of which much use was made by us in the report drawn up, during Dr. Hewitt's presidency, on the subject of infantile mortality, might be adopted in regard to many subjects with distinct advantage. From such a body of practitioners as constitutes our Society methodical reports on matters of common interest could, I believe, without difficulty be obtained, and such work would indeed form a fresh link between Fellows living at a distance and the Society of which they form so important a part. And yet one more suggestion would be to avail ourselves from time to time, by such remuneration as our funds permitted, of the services of specially qualified investigators, as we did of Professor Schäfer's work in connection with the subject of transfusion. It would certainly be a matter of congratulation to us all if by one or other of these methods, or by any other which might occur to any Fellow of this Society, we were able to speak with as much certainty of the significance of flexion and the varieties of dysmenorrhœa as we can of the course of a parametritis or the character and relations of a fibroid. It is more than tempting, gentlemen, on such an occasion as this to refer to many points besides those of practice, in which we are all interested, such as the insufficiency of the time alotted to obstetrical teaching, the inadequate attention given by students generally to the subject of gynæcology, and the still imperfect representation which obstetricians, as such, have in the higher councils of the profession; but time and your patience will scarcely permit. One or two remarks, however, I would just venture to make as

possibly having some common bearing upon each of these questions. One is, that we ourselves may be, after all, somewhat blameworthy in the matter. Until the last fifty years comparatively little of the work done in obstetrics, in this country at least, had been done in the spirit of exact scientific investigation, and our reputation, without doubt, correspondingly suffered. And secondly, I cannot but think that the very modest estimate we have been too generally accustomed to place on the value of our services must have influenced somewhat the value accorded them by others. When an educated medical man is content to wait for some consecutive hours by the bedside of a woman in labour, to conduct her delivery, assisting it perhaps instrumentally, and then attend her subsequently for many days, for the inadequate remuneration usually given; and when a consultant, as the phrase goes, is satisfied to ask among well-to-do people but little more than an ordinary consultation fee for the performance of version or craniotomy, or the induction of premature labour, we can scarcely wonder at an impression prevailing that obstetricians of all ranks are something inferior to, say, the oculist who charges one hundred guineas for an iridectomy, or the rectal surgeon who expects fifty for removing a pile or dividing the sphincter. I am clearly of opinion that the fees for midwifery attendance and operations require careful revision in our favour, and that such revision would be alike beneficial to client and practitioner. Of attendance upon midwifery cases among the very poor I am, of course, not speaking. Such, I think, would be best met by the more general employment of educated midwives. And, indeed, among the artisan class those who could not offer a medical man an approximately adequate fee (and there are probably but few who could not do so by a very moderate amount of frugality and thrift), should, I think, have their wives also attended by midwives of the class I am referring to—trained women, such as hold our examination certificates, or have been in the service of the Royal Maternity Charity. There would

be, I believe, but little difficulty in the way of medical men whose practice chances to be in the poorer districts organising for themselves, or in association with neighbouring friends, a staff of such midwives to relieve them from much of the tiring routine of ordinary attendance; while, as in the case of the Royal Maternity Charity, they would be instructed to send at once for their chief in all circumstances of difficulty and danger. In the twenty-four years I have been associated with the department of obstetric medicine it has been my lot to make the acquaintance of too many medical practitioners who have prematurely died, and whose health was undoubtedly undermined by their harassing attendance on large numbers of scantily paid cases of midwifery. Some such plan as I have ventured to suggest, and towards the realisation of which our Society, by its examinations of midwives, has given valuable help, could not fail, I think, to at once improve our professional position, lessen the strain on the health of many of our brethren, and rather promote than diminish incomes already too slender. The passing reference I made a few moments ago to surgeons practising specially invites some allusion to the subject of specialism as it affects our department of medicine. It is quite unnecessary for me to go over the ground so well occupied by far abler pens than mine in the controversy which followed the publication of Dr. Reynolds's address on "Specialism"; but there is one observation I should like to make, which appears to me to tell in favour of special practice, and it is this: that I have repeatedly known cases of organic disease or defect (and I feel certain my experience is that of many others)—cases ranging in gravity from cancer of the uterus to congenital stenosis of the cervix—either wholly ignored by the physician in attendance, or treated without local examination, as functional disorders simply, and, as a result, a certain curtailment of life in the one case, and persistent dysmenorrhœa with general ill-health and sterility in the other. One could, indeed, occupy an evening, and perhaps not unpro-

fitably, with the narration of such cases, and they would form an interesting commentary on the assertions of those who disparage the pursuit of special practice. The field of medicine is so large, that I believe it is rather by the development than the diminution of special investigation and practice that the numerous problems still unsolved will be cleared up and fresh advances made. At the same time, I willingly recognise the first importance of a good general knowledge of medicine to all, and that he will probably make the best specialist who starts from the broadest foundation of general attainments. One other reference to the work of the Society I would make before bringing to a conclusion these few remarks. In the closing address of my gifted predecessor he spoke with a justifiable pride of the varied and important contributions which had been sent in during his tenure of office. I am naturally anxious that when I vacate this chair I may have a similar success to detail. But that this may be so, gentlemen, I must ask you all, amid the pressure of a daily work which I know to be great, to yet remember that this Society, whose prosperity is, I am certain, dear to you all, can only fulfil the great aims of its founders, and carry on its useful and honourable work, as you continue to furnish it with the necessary material for discussion and thought. I am induced to say this much, because I am told that just now, though our financial and numerical prosperity is great, there is something of a dearth of those contributions which form the true basis and indication of our success. I appeal, therefore, to our senior Fellows, who have so often instructed us before, to remember us still and give us from time to time the benefit of their matured experience; I appeal to our younger Fellows, not yet so pressed with the avocations of practice, to give us of the results of their energy and genius; and I appeal, indeed, to all to send us some records of their observation and work, so that our Society may continue to flourish, and each feel that in that success and its fruits he has a personal interest and share. So numerous now are the

channels by which men may give the world the benefit of their work, that our older societies are apt to be at times forgotten in the work of suburban and provincial and annual meetings, associations and congresses; but the potentiality for good of a society like this—with its regular meetings, where subjects of interest can be adequately discussed; with its annual 'Transactions,' forming a permanent record of work and an obstetric literature with which any Fellow may feel proud to have his name associated; and with the social and literary advantages of its reading-room and library—is a force well worthy both of conserving and developing. May I venture, in conclusion, to suggest some few subjects on which, of late at all events, but few contributions have been brought before the Society, and yet about some of which much that is fresh has been learned, though much yet remains to be known. The diseases of the female bladder, for example, form a group of cases, from chronic catarrh to intra-vesical tumours, about which our knowledge is somewhat scanty and our treatment too often unsatisfactory. We have had no discussion, if I remember rightly, about the ablation of the uterus for cancer, and yet it is now an operation which has been largely performed, and by several of our Fellows. The relations of chronic metritis, the areolar hyperplasia of Thomas, the chronic parenchymatous inflammation of Scanzoni, to subinvolution—if indeed, there be such a malady apart from hyperæmic proliferation of connective tissue—and its treatment both stand much in need of elucidation. The relations of epithelioma to lacerations of the cervix, the starting-point of epithelioma in the nullipara, and the pathogenesis of fibroids, are other points, again, of singular interest, on which we should welcome observations and research. The comparative physiology of menstruation, which is being ably dealt with by Dr. Wiltshire in the lectures he is publishing elsewhere, and which I grudge much to the pages of the 'British Medical Journal,' would be a subject of high interest to bring before the Society as a basis for the more exact and

scientific study of its pathology. And in the pathology of menstruation, it must be remembered, much more is included than simply the painful performance of the function. The influence on the whole system is considerable, as the eruptions, the neuroses, and the blood impairments which its faulty performance induces sufficiently indicate. Then, again, in the domain of obstetrics, the treatment of extra-uterine fœtation, and the diseases of the ovum and of the fœtus in utero, are subjects of which for long we have heard but little. As an illustration of the rather general unfamiliarity with these matters which prevails, and which discussion here would do much to mend, I may mention that at the late M.B. honours examination at the London University a considerable portion of the picked men who were in for it had never heard of a papyraceous fœtus, even although its synonym of secondary fœtus was given. And one still not very infrequently comes across a lingering belief in hydatids of the uterus as the equivalent of vesicular degeneration of the chorion. In connection with that examination, also, I am reminded that a careful study of the variations of the fœtal pulse under varying circumstances, during gestation as well as during an ordinary and prolonged labour, would form a very acceptable monograph to bring before the Society, for most English text-books have but little about it, and that little somewhat contradictory. And, lastly, the operations of Porro, Freund, and Thomas, and in gynæcology of Battey (who, I may mention, was a contributor to the very first volume of our 'Transactions,' on the operative treatment of vesico-vaginal fistula), must inevitably before long come up for consideration and judgment.

Permit me now, gentlemen, to end as I began, by expressing once more my sincere thanks for the great honour you have conferred upon me, the greatest I can ever attain; and once more also to express my earnest hope that neither the work nor the fame of our Society may suffer any diminution during my tenure of office.

A vote of thanks to the President for his interesting address was proposed by Dr. ROBERT BARNES, seconded by Dr. GRAILEY HEWITT, and carried by acclamation.

TURNING IN CASES OF CONTRACTED BRIM.

By P. L. BURCHELL, M.B.

I OUGHT, perhaps, to apologise for troubling you at all with the following crude remarks; my excuse for so doing is, that I have for many years observed that in certain cases, my younger professional brethren are sometimes at a loss, and in great doubt as to the best way to proceed.

I have, frequently, been consulted by friends in cases where the labour has been so lingering, that great anxiety has resulted, and upon looking into my case-book, have found the details of as many as 45 cases, such as follow, out of 8000.

A woman, who has had several children, easily brought naturally into the world, in about the sixth or seventh labour finds herself unable to be relieved in the usual easy manner; and her medical attendant, no advance having been made for many hours, is at last obliged to have recourse to long forceps which often failing, subsequently to craniotomy.

I find I have met with forty-five cases in which a contracted brim, resulting, as it appears to me, from a deposit upon the promontory of the sacrum, after several natural births, has necessitated some other than the ordinary treatment. I will only give a brief account of one patient, that may be interesting to some of my younger colleagues, and the treatment adopted, useful for their guidance.

What I am about to advance is *now* no new proceeding, but when I first practised it I believe it *was* new, or at any rate very rarely had recourse to. The first that

occurred to me, was a private patient of one of the Royal Maternity midwives (Mrs. Griggs), when I held the office of one of the surgeons (a good many years ago).

On Aug. 31st, 1856, Mrs. B—, an immensely fat woman, æt. 38, had been in labour with her eighth child many hours. Head above brim with a large "caput succedaneum," pains had been very violent but were diminishing in power, and the patient's strength beginning to fail. I applied long forceps but did not succeed in delivering, and had recourse to the perforator; she made a good recovery. I found on inquiry she had always had easy deliveries, and the midwife informed me she had had children quite as large as the one I had just brought into the world, and generally, she was in the house but a short time previously to the birth.

At Mrs. B—'s next confinement, which was on Jan. 12th, 1858, I was engaged, and when summoned found os uteri very high up and dilated to the size of a crown-piece, and very soft and dilatable; so I at once determined to try delivery by turning, and brought a full-sized child into the world alive, but not without some difficulty.

The same course I adopted in the same patient at two subsequent labours with the like result. Since which period I have followed the same plan in forty-five cases as stated, saving the lives of thirty-eight children and with no fatal results to any of the mothers. I have been very much surprised to find that this mode of practice has been very rarely followed by the gentlemen (and some of great experience) with whom I have had communication upon the subject. I know several of our professors believe that there frequently *is* a diminution in the capacity of the inlet of the pelvis in women after bearing many children, quite independently of ordinary disease.

Dr. Roper, if he be present, will remember one case, a patient of his late lamented partner, Mr. Hopkins, that came under my care, a few years since, of contracted brim, in which I saved the life of the child by this treatment; at the woman's previous labour its life was sacrificed, and

brought into the world with the greatest difficulty. I am a great advocate of the use of long forceps in suitable cases, but many such as I have just mentioned are better treated by turning according to my experience.

Dr. BARNES observed that turning in minor degrees of pelvic narrowing had been much resorted to since Sir James Simpson advocated it. He himself had practised it largely and had placed turning between the forceps and craniotomy. Greater experience, however, had led him to the conclusion that Tarnier's forceps give a better chance of delivering a live child than did turning. With the forceps in common use, turning in some cases was better; but he believed the cases were very rare in which Tarnier's forceps was not superior.

Dr. CHAMPNEYS said that he had two points to call attention to in connection with Dr. Burchell's interesting cases. The first was that increasing difficulty in successive labours was well known and sufficiently explained by such facts as the increasing powerlessness of labour, the increasing size of the children and the increasing size and hardness of their heads. Such a theory as progressive diminution of the pelvis was therefore unnecessary, but it was also directly contrary to known facts. The growth of bony tumours was very rare, and the direct measurement of the pelvis by the whole hand—by which alone even approximate accuracy could be attained, had not apparently been practised in his cases. Where it was practised, no such result as that indicated had been arrived at. With regard to the frequent use of turning, it must be remembered that a fallacy surrounds the frequent use of all operative procedures; the practitioner who turns all children or who puts forceps on all heads will of course get the best percentage in the results of operation cases, but will by no means save the most women and children.

APRIL 4TH, 1883.

HENRY GERVIS, M.D., President, in the Chair.

Present—49 Fellows and 7 visitors.

Books were presented by Dr. B. F. Baer, Dr. H. W. Acland, Dr. W. S. Playfair, and Mr. T. Spencer Wells.

Charles Davidson, M.R.C.S.; Henry Roxburgh Fuller, M.A. Cantab., M.R.C.S.; Theophilus Hoskin, M.R.C.S.; Robert Edward Inman, M.R.C.S.; Percy S. Jakins, M.R.C.S., and H. Macnaughton Jones, M.D., were admitted Fellows of the Society.

Patrick J. Cremen, M.D. (Cork) and Philip W. G. Nunn, L.R.C.P. Lond. (Bournemouth) were declared admitted.

The following gentlemen were elected Fellows:—Robert John Allan, M.R.C.S.; John Edwin Cooney L.R.C.P. Ed. (Fulham); John Gordon, M.D. (New Cross); and Robert Percy Middlemist, L.R.C.P. Lond.

The following gentlemen were proposed for election:—Alexander George Duncan, M.B. M.C.L. Aber. (Stamford Hill); Peter Horrocks, M.D.; Arthur Jukes Johnson, M.B. Toronto (Ontario); Oliver Calley Maurice, M.R.C.S. (Reading); John Irwin Palmer, M.R.C.S. (Kingston-on-Thames); Francis Joseph Salter, L.R.C.P. Ed. (Leeds); Henry Sutherland, M.A., M.D. Oxon.; and Thomas Marshall Wilkinson, F.R.C.S. Ed. (Lincoln)

DEAD FŒTUS.

Dr. Godson exhibited a fœtus of about four months' development with placenta attached, showing a knot in the umbilical cord with atrophy of the cord on either side of it. The patient from whom it had been expelled had fallen down when four months advanced in pregnancy, and from that time the womb ceased to increase in size. No signs of abortion however occurred till three months subsequently when the specimen shown was suddenly expelled. Dr. Godson had seen the patient a fortnight previously and had diagnosed a dead fœtus *in utero*. The knot in the cord appeared to be the cause of death.

DERMOID CYST.

Dr. Edis exhibited a dermoid cyst he had removed from a patient, æt. 42. Married eleven years. Mother of six children, youngest thirteen months. The patient had no reason to suspect the presence of any tumour until just after her last confinement, when the abdomen did not return to its normal size. She had a miscarriage in July, 1882, about the fourth month, and from that time the abdomen began to increase in size.

On examination a tumour was detected extending up to about half way between the umbilicus and the scrobiculus cordis, apparently semi-solid, giving only obscure signs of fluctuation. *Per vaginam* the uterus was found to be drawn up out of the pelvis, the cervix being on a level with the symphysis pubis, and immediately behind this the tumour occupying the greater portion of the pelvis, of about the size of a fœtal head, continuous with the tumour felt in the abdomen.

She was admitted to the Chelsea Hospital for Women on February 20th, 1883. On the 23rd the tumour was removed by abdominal section. It proved to be a dermoid cyst, composed of two portions, communicating

one with the other, resembling a figure of eight in shape, containing large quantities of sebaceous matter, hair, and a dirty blackish fluid. There were numerous adhesions both to the uterus and neighbouring organs, as also to the pelvis. A separate ovarian cyst the size of an orange was found attached to the right ovary. This was removed together with both ovaries. Owing to the numerous adhesions and the difficulty in arresting bleeding the operation lasted one hour and a half.

The patient made an uninterrupted recovery.

On examination of the tumour it was extremely difficult to determine from whence it had sprung. At the time of operation it seemed to have a very extensive attachment to the posterior portion of the fundus uteri. Both broad ligaments were so much involved as to necessitate removal, both ovaries as well.

UTERINE FIBRO-MYOMA.

Mr. Knowsley Thornton showed a large uterine fibro-myoma, removed at the Samaritan Hospital on March 21st by supra-vaginal hysterectomy. The patient was a married woman with no family, æt. 34. The abdomen of the patient had been opened some years before under the impression that the tumour was ovarian, and when a soft fibroid enlargement of the uterus was found, the incision was closed. A hernia had resulted, and became very large, and eventually ulcerated on the surface and bled. The patient suffered constantly great pain and was at last completely bedridden. Mr. Thornton believed the hernia to be a mass of omentum adherent to the tumour and to the parietes; but it proved to be an actual hernia of the fibro-myoma, the adhesions to the abdominal parietes were so vascular that at one time there were twenty-six pairs of compression forceps on about a third of the circumference of the mass. After dissecting out the hernia and freeing the mass from adhesions the broad

ligaments were transfixed and tied on each side, and the ovaries which were both greatly enlarged, one of them being also cystic, were removed; Koeberle's serre-nœud was then applied in the usual way and the stump fixed in the lower angle of the wound. The mass weighed eleven and a half pounds. Mr. Thornton pointed out that the case would have been a good one for cure by removal of the uterine appendages, had the hernia and condition of the old cicatrix not rendered it impossible to close the incision without removing the uterus. The tumour was of the soft vascular kind which gives the best results after this operation, and the ovaries and vessels in the broad ligaments were greatly hypertrophied. A coil of small intestine which was very firmly adherent to the upper part of the old cicatrix, was carefully dissected off and dropped into the peritoneum. The operation occupied nearly three hours. Mr. Thornton believed the specimen (hernia of a fibro-myoma of the uterus) to be unique. In reply to the President he said that the patient was convalescing satisfactorily, and in reply to Dr. Aveling, he said that the ovaries not only could have been easily removed, but were actually removed as a preliminary to the application of the serre-nœud, the base of the mass being too broad to allow of the wire being made to include the broad ligaments as well as the uterine stump.

A FIBRO-MYOMA AND A NEW AXIS-TRACTION VULSELLUM FORCEPS.

Dr. Barnes exhibited a fibro-myoma, and a "New Axis-traction Vulsellum Forceps," which he had devised for the operation. The tumour was sessile and partly embedded in the uterine wall. Before it was possible to get a wire round its base, it was necessary to partially enucleate and to drag it down. The preliminary freeing of the tumour was done partly by the knife partly by the

finger. Then the tumour seized by the axis-traction Vulsellum was dragged down. The axis-traction by carrying the instrument well back, not only brought the tumour within easier reach, without undue or misdirected force, but also left room in front for the manipulation required to adjust the wire and watch the action of the écraseur. The écraseur used was Weiss's endless drum écraseur. Dr. Barnes thought this application of the principle of Tarnier's obstetric forceps would prove of great value.

Dr. Heywood Smith suggested that Dr. Barnes' forceps should be used with his own fibrous tumour forceps with separable blades to lock with midwifery forceps, as otherwise the deep curve of Dr. Barnes might render them difficult of introduction in some cases.

Dr. Aveling said the sigmoid form of forceps which permitted axis traction was invented by himself and published ten years before Dr. Tarnier's forceps of the same form were made known. He was glad to have the opportunity of stating this fact, for the priority of his invention was not recognised to the extent he would wish.

PLACENTA.

Dr. J. Williams showed for Mr. Mark, a placenta from case of Mrs. W—, æt. 30, para 4, confined April 4th, 1883, at the General Lying-in Hospital. Labour natural. Child female, full time.

On the fœtal surface of the placenta is a cyst about the size of a Tangerine orange, two inches in diameter, almost entirely surrounded by the amnion. It is soft and flabby, its walls being of much the same thickness as the membranes. When opened, about two ounces of a dirty brown fluid, somewhat like amniotic fluid, escaped. Its base consists of a fibrous mass the size of an almond, which is laminated, pale yellow in colour, and sinks into the substance of the placenta for about a quarter of an inch.

Report of Committee on Tumour shown by Dr. Wynn Williams at March Meeting.

On microscopical examination the tumour sent to me by Dr. Wynn Williams appears to be made up of plain muscular fibres mingled with a large amount of connective tissue.—Alban Doran.

My examination of a different section exactly accords with this.—Clement Godson.

I have examined the tumour sent to me yesterday by Dr. Wynn Williams and find it to be an ordinary fibroid tumour.—F. A. Champneys.

ON THE "PRESSURE OF THE FEMORA," AND ITS INFLUENCE ON THE SHAPE OF THE PELVIS.

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Before discussing the subject of the present inquiry, it will be necessary to state a few points in the history of the question.

The history of pelvic literature shows a change in the methods of study. The earlier anatomists, such as Cruveilhier and Hyrtl, devoted their attention to the sacrum, the action of which as a wedge was formulated by Dubois and Gavarret; this view was attacked by Matthews Duncan, and is now only found in anatomical text-books, where it still survives, to the confusion and misinformation of the student.

But all studies of the pelvis were vague and uncertain until its normal position was known, and the determination of the normal pelvic inclination was made by Naegele, and that of the mechanism of standing and walking by the brothers Weber and by Meyer. This work was so important that it is hardly to be wondered at that the

pelvis has been almost exclusively studied from this point of view, and that other important postures have been neglected.

The earliest pelvic studies were almost exclusively statical, and concerned already formed pelves, as modified by the effects of gravity.

The dynamical effects of muscular action have formed another branch of inquiry, which, however (with one exception), has never been prosecuted with any great accuracy, and which has to be gathered piecemeal from the writings of Hubert and Valérius, Spiegelberg, Freund, and others. In the work of Kehrer, however, we have one of the most valuable sources of information in the whole of pelvic literature.

A new era opens with the serious study of the pelvis during its development, and the writings especially of Fehling on the normal fœtal pelvis, and of others (*e.g.* Shliephake) on the rickety fœtal pelvis, under his influence, have shown that the subject has to be to a great extent reconsidered from this point of view. Indeed so largely does this branch of study establish the claims of growth and development to points which had long been assigned to other causes, that it is almost necessary to say a few words on the question.

In the classical work of Litzmann the causes of the shape of the pelvis are thus enumerated:

1. Original design, development and growth of the parts of the pelvis.
2. Body weight.
3. Resistance of bones and cartilages.
4. Traction and pressure of muscles.

Of these the first in the list has been the last to engage the serious attention of pelvic students.

Before proceeding further, we must allude again to the writings of Fehling and others. It has been generally taken for granted that the fœtal pelvis was unexpanded laterally, and that this expansion takes place after birth. Fehling, however, has shown that arguments

drawn from dried fœtal pelves are quite untenable on account of the change of shape which occurs in drying He proves that the transverse expansion of the brim is present even at the third month of fœtal life, and that the "long oval" form, formerly supposed to be normal in the fœtus and new-born child, is only seen as a rare exception and is pathological. Sexual differences are plainly seen in the five months' fœtus. The simple flat pelvis is seen in the fifth month also. The pelvis of the male fœtus is deeper (vertically) and narrower; that of the female fœtus is shallower (vertically) and broader; the acetabula are further apart; all these being supposed to be adult sexual points. The form of the fœtal pelvis is much more like that of the adult than has been supposed. The changes in shape cannot be due to gravity, they can hardly be explained by overaction of muscles, the floating fœtus having no "point d'appui," and the flattening being seen in the third month, when the legs, and especially their muscles, are very slightly developed. Many peculiarities of the rickety pelvis are to be regarded as an arrest in the fœtal condition, some as an exaggeration of the fœtal state, especially in view of the fœtal rickety pelvis. The perpendicular position of the ilia is probably due to the slightness of muscular action and of intra-abdominal pressure; in macerated children with swollen bellies the ilia are much more horizontal.

Muscular action may be the cause of the approximation of the anterior superior iliac spines in the second half of fœtal life. In the fœtus the anterior *inferior* spines are very small. The traction of the ilio-sacral ligaments is far less important than has been supposed, the fœtal pelvis has its transverse development without it. If the pelvis of the new-born child were so pliable that the body weight actually bent the ilium, this would be shown pre-eminently at the soft cartilaginous parts, *e.g.* the acetabula and alæ of the sacrum. The acetabula show no signs of indentation, and yet they are easily indented in a new-born child without increasing the trans-

verse diameters. Again, the fulcrum (ala of sacrum) should show signs of pressure; on the contrary, the female pelvis which is particularly broad has particularly broad sacral alæ. The slenderest part of the brim is just anterior to the sacro-iliac joint, and yet the greatest curvature is (in new-born children) further forward where the bone is thicker. If the pelvis of the new-born child is so soft that in the first year the thick ilium is bent under mechanical pressure, why is it so different from the malacosteon pelvis, and why are rickets and malacosteon so different? The exact limits of the effects of growth apart from the influence of the body weight and traction of muscles must be hereafter determined. Meanwhile Fehling concludes that:

1. The transverse expansion of the fœtal pelvis depends on original formation and appears very early. The theory of its production by the body weight is at least superfluous.

2. Sexual differences are generally present from the fourth month onwards, and are perfectly distinct at birth.

3. The pelvis of the fœtus and new-born child shows transverse expansion and also marked axial curvature of the sacrum.

4. The likeness of this transverse expansion to that of the rickety sacrum, besides some other points, indicate in this pelvis an arrest on a fœtal grade ***.

Such are the conclusions of Fehling.

The fœtal rickety pelvis has been studied by Kehrer, Shliephake, and others.

Writing before Fehling, Kehrer remarks on the bad logic of studying the fully developed pelvis and neglecting the earlier forms. He considers what may be called his favourite subject, the action of muscles, and especially of the psoas, middle fasciculi of the iliacus, erector spinæ, and finally all the muscles of the hip-joint together, converging radially towards the upper end of the femur.

He concludes that many of the characteristics of the rickety pelvis appear in the fœtus and child not yet on its

legs, and cannot therefore be the effects of the body-weight and counter pressure of the femora, but only of the action of muscles and ligaments. "It is, therefore, proved for rickets that the action of muscles plays a much greater part than has been hitherto supposed. How far the body-weight and counter-pressure of the femora can be held answerable after my observations for a plastic effect on the rickety pelvis I will not further inquire. They can at most be allowed to rank as auxiliary forces, together with the primary and self-sufficient action of the muscles."

Shliephake and others have described many fœtal rickety pelves possessing the usual rickety points.

On the above extracts we will only remark that, although Fehling's conclusions can hardly be assailed, it must not be forgotten that the relative force of growth, gravity, and muscular action can scarcely be estimated. Kehrer's conclusions, assigning to the action of muscles and ligaments, the exclusive or almost exclusive right to rickety deformity, is met by one of the observations of Fehling quoted above. It may be remarked that Kehrer's conclusion starts on a false premiss, but this may perhaps be excused in one who has done such excellent experimental work on muscular action, and may, therefore, be pardoned for being an enthusiast.

The perusal of such work as Fehling's produces a sort of feeling of despair, and an impression that it has finally disposed of all mechanical considerations. Such a feeling, however, soon passes off when the malacosteon pelvis is remembered, a pelvis in which all actions but those of pure mechanics are necessarily eliminated, and which shows that just as the influence of growth must be remembered even where it cannot be proved, so the domain of mechanical influences extends back from the malacosteon pelvis where it holds undisputed sway, over the other pelves where it cannot but exist unless its action for the malacosteon pelvis is also to be denied.

With these few words we will pass on to the consideration of our subject.

The influence of the "inward pressure of the femora," widely invoked for the explanation of pelvic deformities, has been taken so much for granted that it seems advisable to subject it to some scrutiny.

And first of all, it is impossible to read much of the literature of the subject and to study the figures by which it is illustrated, without being at once struck by the impression that it has generally been taken for granted that, not only does the direction of the neck of the femur represent the direction of this force, but that it actually explains it. The deformity in the "triangular" pelvis is so picturesque, and it is so easily explained by saying that you get the downward pressure of the body weight behind and the inward counter-pressure of the femora at the acetabula. A few words will suffice to show that this is no explanation at all.

1. *The shape of the femur,* as long as the bone remains a solid rod, has nothing to do with the transmission of force through it. A bar may be formed into any curve or combination of curves, but as long as it is rigid the force will be transmitted from "power" to "weight" as if these were joined by a straight line. This principle is utilised in Tarnier's forceps.

The weight of the body and the resistance of the earth act through the foot and acetabulum as if these were joined by a straight line. The neck of the femur exists for the sake of freedom of motion of a ball and socket joint and for the sake of leverage.

2. *The arrangement of the cancelli* in the neck of the femur shows the same fact.

The principal cancelli pass almost vertically from the head to the under surface of the neck which is very thick and strong. From these vertical cancelli others run transversely to the upper surface of the neck which is thin. These are evidently braces to secure the neck as far as may be from downward displacement to which its shape would expose it, and which actually takes place when its texture deteriorates.

Finally, the upper end of the shaft consists of dome-shaped cancelli.

The whole of these arrangements point to the vertical transmission of force, in spite of the difficulties of the direction of the neck, as the principal idea.

Are we then to conclude that there is no such thing as the "inward pressure of the femora?" It would be impossible to maintain such a position in the face of nearly all the unsymmetrical deformities of the pelvis, but especially the malacosteon pelvis, on which, as on a wax model, the action of the principal forces is clearly impressed.

Still, the matter is so far from self-evident that it has been thought well to consider it as regards certain pelves.

It will be well to consider in turn all possible sources of "pressure of the femora." These fall under two main heads:

1. Passive resistances.
2. Active operations.

1. The *Passive resistances* act in opposition to the body weight, and are exerted:

(*a*) By the resistance of bones.

(*b*) By the resistance of ligaments.

(*c*) By the action of couples.

2. The *active operations* include the action of muscles.

These will now be considered in turn, as affecting the parts connecting the femur and pelvis, or parts of the pelvis *inter se*.

1. (*a*) The first of the passive resistances to be considered is that of the *symphysis pubis*. It need only be now observed that the resistance here is to the divarication of the pubic bones which would result from the action of the iliac beams.

Into the question of the action of the iliac beam we do not propose to enter; not only has this action been now universally accepted, but it underlies the explanation of nearly if not quite all deformities of the pelvis after they come under the operation of the body weight. Its author

(loc. cit., p. 66), however, speaks thus of the passive resistance of the symphysis pubis :—"In the explanations which follow, the anterior arch will be left entirely out of view; . . . . this fact (the fact of the union of the upper and lower arch by cartilage only, during the development of the pelvis) and the slight mobility of the pubic joint, will almost, if not altogether, annul its influence in modifying the development of the upper half of the pelvis."

We cannot admit this as a solid reason. Cartilage may be as good a "tie-beam" as bone within reasonable limits; but the objection is directly overruled by the experiment of Freund (the only *direct* proof to our knowledge of the beam and lever theory), who suspended the body of a child vertically, supported on the ilia; the symphysis pubis was then divided, and the pubic bones became divaricated ('Monat. f. Geburtskunde,' Band xiii, 1859, S. 202). This directly proves that the symphysis pubis is at least one of the opponents of the outward thrust of the lower end of the iliac beam. In this place it will be well to say a few words on the subject of Scroeder's picturesque sketch of the development of the pelvis. This consists in an assignment of their functions in modifying the form of the pelvis to (1) the body weight, (2) the resistance of the symphysis pubis, (3) the lateral pressure of the femora; and is based on a comparison of the pelvis of the new born child, the normal female pelvis, the cleft pelvis, the flat pelvis, the rickety pelvis, and the malacosteon pelvis. This sketch is admirably written, and when first written was worthy of all praise, but it is based on the assumption that the pelvis of the new born child and fœtus is destitute of lateral expansion, and disregards the fact of rickety pelves existing before birth with marked flattening. The conclusions are therefore untrustworthy, as Fehling has pointed out. The cleft pelvis in the same way, being due to a congenital deformity and existing therefore before the operation of mechanical causes, cannot be taken as evidence of the operation of such causes.

In saying this, however, we by no means reject the forces, all of which can be otherwise proved to be in operation, but merely state the fact that the examples invoked do not prove their existence.

Here, however, as elsewhere in this inquiry, we shall find the malacosteon pelvis has to be considered.

In this case we start with a fully developed normal pelvis, in which the acetabula are placed external to the line of the body weight, and we end with a condition in which this relation is reversed, the acetabula being internal to the line of the body weight.

Whatever mere resistence to the outward thrust of the distal end of the iliac beam may amount to, reaction can never exceed action. This displacement cannot therefore be due to the passive resistance of the symphysis pubis.

Hence *the "pressure of the femora" is something more than the result of resistance at the symphysis pubis.*

(*b*) We have next to consider the *passive resistance of the ligaments connecting the femur with the pelvis.*

Ligaments can only act passively, by means of the resistance which they offer to movements whether muscular or other, and they only come into play when the normal movements tend to be exceeded.

Again, acting as they do by preventing divarication of their origin and insertion, increased tension of them is marked in firm bones by either no deformity, or a more or less limited deformity at their attachments, with a more extended action in proportion to the firmness of the bones and their ability to operate as levers.

Lastly, their increased action is marked by bony hypertrophy of their points of attachment.

The only ligament of the hip-joint attached at any distance from the acetabulum (even though a small distance), and the only one therefore capable of producing any marked displacement of the acetabulum as a whole, is the ilio-femoral band. This band, as is well known, is attached to the anterior inferior iliac spine above and to the anterior intertrochanteric line below, its action is to

limit the extension of the hip-joint, and is well seen in the kyphotic pelvis where the diminished pelvic inclination puts it on the stretch. The results are apparent not only in the slight indentation of the acetabula, but in the hypertrophy of the anterior inferior spine, and the rotation of the os innominatum round an axis running at right angles to the band, through the acetabulum; the upper part of this bony mass being rotated downwards outwards and forwards, the lower part upwards inwards and backwards. The rudimentary condition of the anterior inferior iliac spine in the fœtus and new born child shows the same thing, this ligament having been shown by Meyer to maintain the erect posture.

This action, however, concerns the whole of the os innominatum and is quite different from that of the "pressure of the femora;" moreover it cannot be said to be opposite to the outward thrust of the iliac beam.

Lastly, it cannot be imagined capable of producing the effect observed in the malacosteon pelvis, and nothing short of this will satisfy our requirements.

We conclude, therefore, that *the "pressure of the femora" is something more than the result of the passive resistance of the ligaments of the hip-joint.*

(c) In searching for an explanation of this "inward pressure of the femora" it is tempting to look for the operation of a "couple of forces" between the point of operation of the body weight and the point of resistance at the acetabula. If the acetabula were to fall *within* the line of action of the body weight near the posterior superior spines, such a couple would be found acting inwards and tending more and more to invert the distal end of the iliac beam. But in all normal and most abnormal pelves the couple points *outwards*, the acetabula being external to the line of action of the body weight, and yet the inversion of the iliac beam is plain, being effected *in spite of* this outward-acting force.

In walking, the arm of the lever representing the distance between the action of these two forces is indeed

shortened by the tilting of the pelvis downwards on the side on which the weight falls, but this inclination falls far short of eliminating, still less of reversing the action of this couple of forces.

Under this head should probably be discussed the passages in which Dr. Matthews Duncan speaks of the "pressure of the femora" in his "Researches in Obstetrics." These passages, which are scattered, are as follows:

P. 69.—"The force at the lower extremity (of the iliac beam) is the reacting force of the weight of the body pushing in a direction upwards and inwards, also towards the centre of the pelvic circle."

P. 79.—"During the whole period of growth, while the pelvis is increasing in size, and while its joints are still comparatively loose, and the bones not solidified or consolidated, it has ever and anon, in standing, walking, &c., &c., to undergo pressure from two great forces; the one, that of the weight of the body transmitted to the sacrum, and from it to the posterior iliac tuberosities, or upper ends of the iliac beams; the other, the reacting pressure of the same force, transmitted from the femurs to the acetabula, or lower ends of the same iliac beams. Both of these forces tend, as already pointed out, to drag the extremities of these beams in a direction, more or less, towards the centre of the pelvic cavity."

P. 83.—"In the production of deformities of the bones, rendered incapable of their natural resistance by rickets or malacosteon, there are two great causes to be considered, namely, the efforts of the muscles attached to the bones, and that part of the weight of the body superimposed on the various bones in the erect position. The sequel to this paper will justify the complete exclusion of the former of these causes from any important place in the explanation of the great deformities—at least, of the characteristic rickety and malacosteon pelves of the human female. This conclusion might almost be arrived at on *a priori* grounds alone. For if we compare the irregular action of

any muscle or set of muscles, to the influence of the great and steadily acting weight of the body, the unimportance of the former will appear on account of its comparative slightness in physical force, its essentially intermitting and temporary character, as well as the antagonism of the various muscles, not to speak of its utter inapplicability, had it any imaginable force or duration, to explain the changes in conformation actually produced."

P. 92.—"The natural pressure of the heads of the thigh bones upwards and inwards drives the acetabula in that direction."

But the following passage seems opposed to the former quotations:

P. 105.—"To produce equilibrium, the reacting forces must be equal and contrary. They are applied to the lower end of the iliac beam and the cotyloid cavity. In order to resist the vertical force downwards, there must be a corresponding reactionary force upwards; and, in order to balance the force throwing outwards the lower end of the beam, there must be a force inwards. The combined forces will act in a direction upwards and inwards. The upward force is easily accounted for; it is the supporting of the weight of the body. The inward force cannot be supplied by the pubic bones; these can only act to some extent as a tie-beam to fix the lower ends of the iliac beams. The direction of the conjoined forces is indicated by that of the neck of the thigh-bone, and the inward force is supplied by the enormous muscles and some of the ligaments which are in action in the erect position, and this with such force as to keep the head of the thigh-bone securely in the cotyloid cavity, a result quite impossible without very powerful inward pressure."

It must, however, be remembered that the atmospheric pressure is quite sufficient to support the whole weight of the lower limb even after the removal of all muscles and ligaments. This does not of course apply to the application of violent or excessive force.

With the view that the counter-pressure to the body

weight acts upwards and *inwards* we cannot agree. This would in a sense be the case if the acetabulum fell *within* the line of the body weight, but it falls *without* it. This can be seen by studying any normal pelvis, and from Dr. Duncan's own figure 7, p. 68, in which the acetabulum can be seen to form the extreme outer end of the iliac beam; it can also be seen that in the normal adult female expanded pelvis the acetabulum is altogether external to the whole of the curve of the lateral part of the pelvic brim, and cannot, therefore, conceivably produce any flattening of this curve. It is true that the direction of the neck of the femur represents the line of action of the "inward pressure of the femora," but, as above remarked, it does not explain it. With the question of muscular action we shall deal later.

Kehrer (Beiträge, s. 14) deals with the same subject with reference to the flat pelvis. He says: "Let us think of the two dist. sacro-cotyl. as straight rigid lines, on the point of junction of which a vertical force acts downwards (the body weight), and on the lower extremities of which parallel forces act upwards (the resistance of the femora). We can combine each of the lower forces with the upper to form a "couple," and the upper force can then be imagined as compounded of two forces. The parallel and opposite forces of each "couple" try to rotate the rigid rod between them so as to move the acetabulum upwards and outwards (at right angles to the rigid rod), the upper end of the rod downwards and inwards. As, however, the inward tendency of the upper extremity of the rod is opposed by the equal and opposite action of the other side of the body, the upper end can only move vertically downwards. But the lower extremities of the rods in diverging must necessarily expand the arch lying between them (the inter-pubic angle between the horizontal rami)."

S. 22.—"The question whether in the living subject the ilia are bent by the body weight (the heads of the femora being fixed and pressing in the opposite direction), or by the pressures of the acetabula upwards, inwards, and

backwards, and the counterpressure of the fixed base of the sacrum, is to be answered in the sense that both are probably in operation. As long as the individual stands or sits upright, the body weight must have full play, and the resistance from the heads of the femora be in operation. But in standing and balancing the pelvis, the active pressure of the muscles of the hip must come into operation. For let us imagine the pelvis prevented from rising by the superincumbent body weight, the muscles going from the ossa innominata to the femora must press the heads of the femora against the acetabula, and if the bone is softened drive it towards the pelvic cavity. But probably the operation of these muscles would soon limit their own effect by approximating their origins and insertions and producing relaxation, still within certain limits they are quite competent to approximate the acetabula to the promontory. Therefore the sagittal bending of the ilia is produced by the body weight and the counterpressure of the *adducted* femora, but probably also by the pressure of the muscles of the hip." In the above quotation the word "adducted" (underlined by us) must be noted, as it introduces a new element, namely, muscular action. If the femora must be adducted in a "rubber" decalcified pelvis to produce this effect, it is plain that adduction is due to muscles. Of this we shall speak further on. It is plain from the first quotation that Kehrer makes the couple of forces act outwards and not inwards. This is in accordance with our own arguments above.

We conclude, therefore, that *the "pressure of the femora" cannot be due to the action of the couple of forces acting on the bar represented by the distance between the line of action of the body weight and the resistance in the acetabula.*

2. We now have to consider the *action of the muscles joining the femur and pelvis.*

And first we must premise that the action of muscles (as well as that of ligaments) is exerted at both attach-

ments. If the bones are firm we should expect to find either no sign or slight signs of displacement, but we should probably find the frequent sign of bony hypertrophy at the points of attachment (as in the case of the ilio-femoral band in the kyphotic pelvis), but if the bones are soft, some displacement should be apparent at origin, or insertion or both, according to the mobility of the points of attachment.

The action of muscles (if these were the cause of the "pressure of the femora") would be shown by the approximation of origin and insertion. Their combined action on the hip-joint would be to drive the head of the femur and the acetabulum inwards and to drag their origins from the pelvis outwards.

The great difficulty that seems to meet us is that both origins and insertions (as marked by the head of the femur) appear at first sight to be displaced inwards in the same direction, but on looking more carefully into the matter two things at once strike us.

(1) That many of the most powerful muscles rise from near the middle line in front and behind; (2) that the immediate neighbourhood of the acetabulum itself is comparatively free from muscles.

The result of (1) will be that the muscles of the two sides of the body will oppose the divarication of their origins; the result of (2) will be that the opposition to inward pressure will be less near the acetabulum.

A difficulty occurs in the tuber ischii and adjacent rami of pubes and ischium to which very powerful muscles are attached. But here the malacosteon pelvis shows that although the side of the pelvis is doubled in together, the tuber ischii and adjacent parts are *relatively everted*, marking the traction of the muscles rising from this region.

It is of course conceivable that this eversion should take place in a softened bone itself doubled in by superior force.

The action of muscles has been the battlefield of some contention.

Hubert and Valérius speak thus (p. 744):—"The forces affecting the pelvis (considered as a ring) can be

thus divided:—1st. (Superior half-ring). Two symmetrical vertical forces placed to the right and left of the summit of the ring representing the traction exerted by the weight of the sacrum and sacro-iliac ligaments. Two other forces, also symmetrical, a little oblique forwards, and also directed from above downwards, balancing the former (traction exerted by the ilio-psoas muscles on the superior half-ring, bearing on the edge of the inferior half-ring). These groups of forces, considered with reference to the superior half-ring, evidently tend to crush the arch formed by this superior half-ring, if the heads of the femora or the acetabula are considered fixed. This can be done as we shall see. 2nd. (Inferior half-ring). This has to resist (1st.) the pressure exercised by the last forces just mentioned, and which pass like ropes over pulleys over the ilio-pectineal ridges, which they consequently tend to depress and force into the interior of the circle. (2nd.) (it has to resist) two groups of forces applied to the descending rami of the pubes and ascending rami of the ischia, and directed obliquely from above downwards, from before backwards, and from within outwards (the adductors of the thighs). These forces, which oppose the eversion of the heads of the femora, keep the extremities fixed, under the pressure which the bony ring exerts on the extremities, that is to say, are one of the principal agents by which the points of support of the pelvis react on the acetabula. Their effect, as far as concerns the pelvis during equilibrium, is therefore to draw the symphysis pubis towards the femora, that is downwards and outwards. This action is directly contrary to the former. . . . In short, the forces in question would tend . . . to increase the transverse diameter of the brim, to depress the summit of the superior curve, to straighten the anterior inferior arch, by indenting the ilio-pectineal region, and drawing the symphysis pubis downwards and outwards."

This will be seen to be a plea for the action of special muscles.

The opinions of Dr. Matthews Duncan on the subject have been quoted above. Except in one passage (which seems to involve a change of opinion from the other quotations) he pronounces strongly against the influence of muscular action in producing the "pressure of the femora."

Spiegelberg (S. 144) says:—"The forces which act on this ring are principally the body weight in the erect position, also the traction exerted by the ilio-psoas and adductor muscles. The latter act only on the inferior half-ring, the most powerful force (the body weight) on the superior; the ilio-psoas muscles bend the vertebral column towards the extremities and thus press the sacrum towards the pelvic cavity, joining their action to that exerted by the trunk. Besides, they also exert a direct influence on the inferior half-ring. The influence of the forces acting on the superior half-ring is that the sacrum is approximated to the anterior wall of the pelvis, the transverse diameter expanded, the wall above-mentioned flattened."

To this Freund ('Mon. f. Geb.,' Band xiii, 1859, S. 186) replies:—"Since the body weight in the erect position acts downwards and backwards; since the action on the (sacro-iliac) symphysis and its ligaments of the pressure affecting the posterior pelvic wall does not exist in the erect position; since the iliac muscles rather approximate the two acetabula when the legs are fixed; since besides the psoas muscles there also exist the latissimus dorsi, quadratus lumborum, sacro-lumbalis, multifidus spinæ, glutæus maximus muscles, we could (although remembering the muscles which are also competent to pull the sacrum forwards, namely the levator ani and pyriformis), say with as much justice as Spiegelberg: 'the influence of the forces acting on the superior half-ring is such that the sacrum is drawn away from the anterior wall of the pelvis, the transverse diameter is diminished, the wall in question expanded.'"

Spiegelberg further says:—"The inferior half-ring has to resist the superior; it sustains moreover the pressure of the ilio-psoas which passes over it on either side and

which tries to press it inwards, and the influence of the adductors, which in consequence of the direction try to divaricate the pubic bones."

To this Freund replies :—"With regard to the pressure of the ilio-psoas muscles, I find it in no way confirmed by the rickety pelvis. Since Spiegelberg can refer neither the general flattening of the anterior wall, nor the more uncommon occurrence of indentation of the pubic bones to a pressure on the external boundary of the horizontal ramus of the pubes, and since at the spot over which the tendon passes, no special impression can be seen, I ask wherein that pressure manifests itself; to such a pressure moreover the pressure of the pectineus and obturator externus would be antagonists. The action of the adductors (their traction outwards, downwards, and backwards) is compensated by the sartorius and rectus femoris and the muscles converging inwards from the tubera ischii (semitendinosus and semimembranosus), besides the obturator internus and levator ani. . . . The determination of the influence of muscles on the production of the rickety pelvis is a difficult one, on account of so many muscles rising from the pelvis and being inserted into it, of partly antagonistic, partly similar, partly entirely different action in different attitudes, and also from their connection with parts so moveable and so much moved."

The above controversy will be seen to centre round the action of certain muscles. Spiegelberg's plea for the action of these is met by Freund on the ground of the action of their antagonists, probably by way of a "reductio ad absurdum;" but it seems hardly fair to quote such a muscle as the levator ani which has nothing to do with progression or even the erect position.

Kehrer's opinions have been partly quoted above under another heading. About the triangular pelvis he says, (s. 25), "If it is asked finally what forces accomplish in the living subject the adduction of the pubic bones, the median components of the pressures which are exerted on the acetabula partly immediately by the heads of the

femora pressing against them, partly mediately by the entire muscles of the hips through the means of the heads of the femora, are capable of producing a mutual approximation of the pubic bones. These forces, however, appear in the living subject insufficient to approximate the acetabula so strongly as is found in the "triangular pelvis;" and I therefore conclude that besides the pressure of the hip-muscles on the hip-joint, the pressure of the bed on the trochanters and therefore on the heads of the femora and acetabula, the lateral decubitus being changed, is capable of playing a great part in the anomaly in question."

It has already been remarked that no mechanical arguments can be founded on the rickety pelvis, considering its characteristic development in the fœtus, and therefore before the possibility of mechanical influences either from the body weight and its derivatives, or from the over-action of any muscle or groups of muscles, the floating fœtus lying perforce in an attitude determined by muscular equilibrium. The nutritional influence of muscular exercise on bones is another matter.

Kehrer concludes (s. 34) that, "the traction and pressure of muscles and the pressure of bones is a considerable factor in the production of the shape of the pelvis;" but he adds (s. 35) that we do not yet know accurately the action of muscles on *unsoftened* bones.

Our opinion is that while the influence of muscular pressure and traction on a pelvis subjected to the influences of standing, walking, &c., can hardly be denied, it is impossible to assign to any muscle or groups of muscles their individual effect, considering how with every movement the resultant probably changes. We must, therefore, adhere to the general view enunciated above, and in speaking of the action of muscles we shall mean merely their combined action, compounded among themselves and also with other influences such as the body weight, which cannot be eliminated, though its influence alone is incapable of explaining the "inward pressure of the femora."

We conclude then that *the action of the muscles joining the femur and the pelvis is a true cause of the "inward pressure of the femora."*

Before leaving this part of our inquiry, it will be well to imagine an outward thrust of the lower end of the iliac beam and to consider its effects on the lower extremity; the changes produced by this outward thrust must be opposite in direction to the forces opposing or preventing it, and some of these opposing forces may be themselves active forces in the production of the "inward pressure of the femora." If the head of the femur is thrust outwards, the foot remaining fixed, the changes produced in the limb will consist of:

(*a*) Relative adduction of the thighs.

(*b*) A tendency towards genu valgum.

(*c*) Relative eversion of the foot.

(*a*) Relative adduction of the thighs is opposed by the muscles and ligaments tending to abduct the thighs and prevent their adduction.

(*b*) A tendency to genu valgum is opposed by the resistance of the internal lateral ligament of the knee-joint, &c.

(*c*) Relative eversion of the foot is opposed by the muscles and ligaments of the ankle-joint favouring inversion and hindering eversion respectively.

(*a*) The action of the muscles and ligaments connecting the femur and the pelvis has already been discussed.

(*b*) The action of ligaments in general has already been discussed, and it has been shown that tissues capable of passive resistance only can never produce a reaction greater than the force opposed.

(*c*) The action of the muscles favouring inversion of the foot is not thus limited, and, since muscles are capable of originating force, these muscles are capable (though at a disadvantage) of exerting active inward pressure on the acetabula.

Although this action is far from being striking and picturesque it can hardly be denied.

We therefore conclude that *one of the factors in producing the "pressure of the femora" is due to the action of the muscles favouring inversion of the foot.*

It must be remembered also that with the increasing width of the pelvis the distance between the knees and feet does not correspondingly increase (as compared in the two sexes and in the infant and adult). It is not denied that a final cause also exists in the maintenance of balance by this arrangement.

We therefore come to the conclusion that *the chief cause of the "inward pressure of the femora" in symmetrical pelves is muscular action, exerted principally between the femur and pelvis, but also to some extent between the foot and pelvis.*

A corollary from this follows, viz. that use of the lower limbs will increase the "inward pressure of the femora."

It will be well at this point to say a few words on the subject of the pelvis of osteomalacia. In this case we start with a pelvis, presumably perfectly and normally developed, full grown, and in which there can be no question of any but purely mechanical influences, growth having ceased.

In the fully developed pelvis of osteomalacia we find the sacrum driven downwards (and rotated in certain ways not now to be considered), and the acetabula driven *inwards* (reversing the normal action of the "couple of forces"), the interpubic angle instead of being expanded, greatly sharpened, and the inward pressure of the femora (so to say) running riot.

Here we wish to indicate a point not usually recognised, but having its own significance, viz. that this "inward pressure of the femora" does not indent the brim uniformly, but bends it most at its weakest point (not, let it be remarked at a point of synostosis, but) at a point about midway along the horizontal pubic ramus, which is all but bent double.

How do we account for this?

No doubt the softness of the bones is the ultimate cause, and this allows all pressures to act more or less unopposed by the resistance of bones or their action as levers. Thus, the action of muscles drives the acetabulum more and more inwards and backwards, unopposed or at least unbalanced by the firmness of bones and by the outward thrust of the iliac beam, which as a beam can hardly be said to exist.

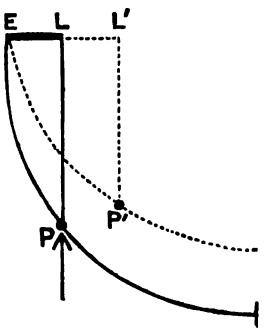
The outward traction at the symphysis pubis which usually expands the interpubic angle, is abolished for the same reason.

Let us remark first that of the three principal origins of the muscles (viz. from near the middle line in front and behind, and from the tuber ischii and adjacent parts) two are markedly dragged out, the symphysis standing out as a beak, the tuber ischii and adjacent parts being markedly everted; behind, the bones are less easily distorted, but the distortion is visible. Here is a strange confirmation of our explanation.

We must next speak of the reversed action of the "couple of forces."

When the acetabulum has been driven inside the line of action of the body weight, the arm of the lever points *inwards*, and the "couple" acts in the reverse direction. The result may be considered from two points of view:

Fig. 1.



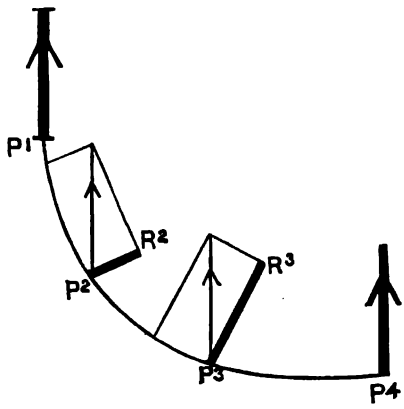
In Fig. 1 the arc of the circle represents a rigid body with a pivot at E. A force acting at P will act on a lever having the length L E, *i.e.* the length of a perpendicular drawn from the fulcrum to the line of action of the power (P), L E being known as the "power's arm." It is easily seen that this will produce rotation round E, and that P rotating round

E will increase the length of L E, which will act at rapidly augmenting advantage.

To apply this :—If the acetabulum once gets displaced within the line of action of the body weight, the distal end of the iliac beam is rotated inwards with rapidly increasing advantage. As the pivot E itself is not fixed but moves downwards, in reality a couple of forces is produced, the increasing length of whose arm has been just illustrated.

In Fig. 2 it is evident that at any point in the arc (except at P^1 where the direction of the force is coincident with P^1, and P^4 where the direction of the force is perpendicular to the arc), the vertically acting force P may be split into two forces (represented by the parallelograms), one coincident with the arc and one perpendicular to it. If the arc is rigid, the force at right angles to it alone can act, and this is seen to increase in the progress from P^1 to P^4. At P^1 the force being coincident with the arc is not split; at P^4 the force being perpendicular to the arc is all expended at right angles to the arc.

FIG. 2.



To apply this :—Supposing the arc to be sufficiently rigid to resist a force acting coincidently with itself, the force (P) will simply be resisted by the equal and opposite force of the rigidity of the bone at P^1; but in its progress towards P^4, the perpendicular P E will steadily increase as far as P^4, where all the force P is at right angles to the arc. If P is the pressure in the acetabulum, its power of indenting the pelvic arch increases as the bone gives way and becomes less perpendicular and more horizontal. The

bone is supposed to be rigid, but the action of the component coincident with the arc leaves its mark sometimes by the compression of the bone in its length during growth, especially by its action at the epiphyses. This was pointed out by the author in a description of an imperfectly developed obliquely contracted pelvis, where the parts of the pelvic arch coincident with the pressure were compressed compared with those at right angles to the pressure ('Obst. Trans.' vol. xxiv, p. 200).

The two above illustrations show the effect of the downward pressure of the body weight and the upward pressure of the acetabula. Whether the acetabula are external or internal to the line of the body weight the principle is true. When the acetabulum is external, the pressure acts against, when it is internal it operates together with the "pressure of the femora" in its action on the iliac beam. The less rigid the bone, the less this counts.

Before considering the obliquely deformed pelves, other principles must be enunciated connected with the effect of alteration of direction of the body weight acting on the upper arm of the iliac beam.

1. If the body weight overhangs one side, the principle enunciated with respect to the neck of the femur comes into operation in so far as the connection between spine and pelvis is sufficiently rigid to allow the whole bony mass to act as a rigid bar, viz. the body weight acts downwards though a line nearer to the fulcrum of the iliac beam (the sacro-iliac joint). The result of this is the practical shortening of the posterior arm of the iliac beam on the overhung side and its proportionate elongation on the other.

2. If the *direction* of the line of action of the body weight be altered, another disturbance of balance between the two sides will result.

(*a*) Fig. 3, p. 95. If the weight A acts vertically downwards, its arm is A^1; if it acts at right angles to the iliac beam (B), its arm is B^1. Thus the more nearly the body

weight acts perpendicular to the iliac beam, the greater its action; and the more obliquely it acts, the less its action.

(*b*) It is plain that this also results from the parallelogram of forces. All forces acting obliquely to the iliac beam may be split into two components (Fig. 2, p. 92), one at right angles to the bone and the other coinciding with it. (If the bone is rigid, the latter vanishes.) Thus the action of the weight increases as the angle increases until (when at right angles), the whole weight appears as the component perpendicular to the beam. Thus, if the body weight acts obliquely to one side, its action (as exerted on the iliac beam), diminishes (while its action in compressing the beam in the direction of its long axis increases), on the side towards which the weight acts, while on the opposite side (viz. the side away from which the weight inclines), the component at right angles to the beam increases, the component parallel to the beam diminishes.

We now come to apply our principles to the unsymmetrical pelves, first premising that overweighting of the affected side is undeniable in the presence of such facts as the increased size and curvature of the leg bones of the affected side.

1. The side on which the weight falls is also naturally the side of the greater action of muscles. If the "pressure of the femora" is mainly due to muscular action in symmetrical pelves, their increased action on one side will produce increased "pressure of the femora" on that side.

2. As above described, the weight falling on one side of the middle line practically diminishes the length of the iliac beam on that side and increases it on the other.

(*a*) This alters the equal balance of the "couple of forces" on each side (which in a symmetrical pelvis drag the anterior pelvic arch, or in other words the symphysis pubis, each to its own side) and gives the advantage to the couple on the side on which the weight does *not* fall. The symphysis pubis is dragged over to the less weighted side, and this action increases rapidly.

(*b*) Together with this rotation or dragging, the aceta-

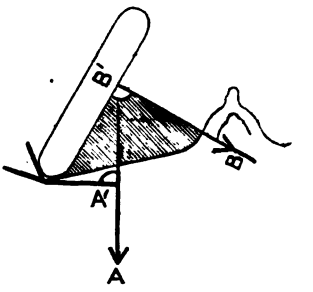
bulum of the overweighted side comes more and more towards the middle line, or in other words moves round the anterior pelvic arch.

The effects of this are that the component acting at right angles to the bone increases, and has therefore increasing power to indent the pelvis (see Fig. 2).

Again, if this action is excessive, both arms would point the *same* way, and would not be antagonists but associates; thus rapidly increasing the original action.

(*c*) When the acetabulum of the overweighted side is drawn nearer to the middle line, the direction of the body weight practically falls obliquely, thus shortening the arm of the weight on the overweighted side, and increasing that on the other side (Fig. 3) producing a similar action to that above described (p. 94, 2 (*a*)). The rotation of the lumbar vertebral bodies towards the affected side is no doubt due to other causes,—causes shared by the rest of the vertebral column, and not specially germane to the present inquiry—but, if otherwise originated, it is no doubt increased by the above mechanical conditions, so that the sacrum comes to rotate round a centre formed by the greater resistance to its advance on the overweighted side.

FIG. 3.



All the above are probably included in the term "overweighting of the side of the scoliosis." The two principal forms of obliquely contracted pelvis (scoliotic and Naegele pelves) have more agreements than differences. The differences are probably due principally to the presence or absence of a sacro-iliac joint (scoliotic and Naegele pelves, 'Ed. Med. Jour.,' September, 1881, by the author). In the *pelvis of Robert* (which must be always considered in connection with that of Naegele) the peculiar distortion is probably due principally to the "pressure of

the femora" unopposed by the action of the iliac beams, which is abolished by their ankylosis.

We conclude, therefore, finally that *in symmetrical pelves and pelves in which the acetabula lie without the line of the body weight, the "inward pressure of the femora" is due to muscular action; in unsymmetrical pelves and pelves in which one or both acetabula lie within the line of the body weight, to this and other causes above enumerated; and that in the phrase "increased pressure of the femora on the affected side" numerous and various influences are implied.*

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Dr. BARNES suggested that one factor in producing flattening of the pelvis in the fœtus might be the attitude with the thighs doubled up. The pressure from this attitude acting upon rickety bones might be enough to produce deformity.

Dr. MATTHEWS DUNCAN had followed by a strong effort the most of the quickly read and many detailed paper, and though it controverted views to which he was at one time attached, he agreed with it in the main. Thirty or forty years ago the doctrines regarding the construction of the pelvis were grossly erroneous, and it was the work of that time to destroy these errors and thus make way for the truth. He was glad to see that Dr. Champneys adopted the chief physiological corrections then made, as to the function of the sacrum and of the iliac beam; and these were great matters, considering the cardinal character of the errors and their diffusion in text books and papers. Dr. Champneys had given a valuable sketch of the progress of this subject and especially of the work of Kehrer and of Fehling. The action of muscles had been strongly insisted upon in summary, and now Dr. Champneys had made a special study of the action of the femur on the acetabulum as a result of body weight and of muscular force and a great contribution to pelvic literature. After all he (Dr. Duncan) would not give muscular action a paramount position, and for that he still vindicated the great force of body weight.

Dr. AVELING wished to call the attention of Dr. Champneys to a pelvis in the museum of the Society, the form of which appeared to be normal although congenital dislocation of the hip-joint was present.

Mr. ALBAN DORAN observed that the theory attributing the form of certain bones to the action of muscles in fœtal life was hard to prove and formed a most dangerous basis for arguments relating to the development and configuration of the pelvis. The movements of voluntary muscles were but feeble in a mature fœtus, but it needed far more force to bend a cartilaginous pelvis

than to move a fœtal arm or leg. The alleged muscular action must be either clonic or tonic. It is against all analogy to suppose that bones are pulled into shape by a series of convulsive attacks affecting the surrounding muscles. On the other hand, the normal tension of a fœtal muscle, not in action, can hardly be strong enough to bend an ossifying cartilage, nor is it probable that striated muscular fibre can maintain itself in a condition of extreme and permanent contraction, sufficiently powerful to alter the form of any part of the fœtal skeleton.

Dr. CHAMPNEYS said that he must thank the Society for the patience and kindness with which they had listened to his long and he feared very dry paper. Dr. Duncan's remarks were especially valuable to him as those of an expert on the subject, and while differing from some of the conclusions arrived at by Dr. Duncan, he neither forgot that those conclusions were thirty years old, nor that the chief result of Dr. Duncan's work (the demonstration of the "iliac beam") was universally accepted and formed the keystone of all arguments founded on the mechanics of the normal and abnormal development of the pelvis. Again, while unable to agree that the inward pressure of the femora was a function of the body weight, he quite agreed with Dr. Duncan that the greatest of all the mechanical forces acting on the pelvis after the assumption of the erect position was that of gravity. Fehling's researches showed that the action of mechanics had been pressed too far, but by no means upset it; indeed, any person who was unable to see the contrary from the study of the pelvis deformed after being perfectly developed (such as those of malacosteon and kyphosis) would seem incapable of reasoning and would deny the persistence of force. With Dr. Barnes' remarks he could not agree. The fœtal attitude, though it would be one of constraint to an adult man or woman, is the attitude of rest or equilibrium for the fœtus; it is seen quite early, and long before the fœtus nearly fills the uterine cavity, and is, therefore, no more a proof of unequal pressure than is the folding of a bud or of the frond of a fern. It cannot therefore be held answerable for the transverse expansion of the fœtal pelvis. The free flotation of the fœtus was alluded to in the paper.

Dr. BARNES replied that he was speaking not of the normal but of the rickety fœtal pelvis.

Dr. CHAMPNEYS could not see that that made any difference, the pressure would be present or absent in both cases alike whether the bones were healthy or not. To Mr. Doran he replied that the spasm of muscles *in utero* is unproved for the ordinary fœtus, and again, apart from the nutritional influence of muscular action (referred to in the paper), would be at least greatly limited by the absence of any *point d' appui* for the freely floating fœtus. He supposed we all agreed that we

came into the world with pelves of a certain form, partly at least because our grandfathers and grandmothers had somewhat similar ones before us, and the difference between the words "congenital" and "atavism" in this connection seemed to be principally that between a word of four and a word of three syllables. He begged to thank the Society once more for their kind attention.

A CASE OF LABOUR WITH ATRESIA VAGINÆ.

By Fancourt Barnes, M.D., M.R.C.P.,

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The patient, M. A. M—, æt. 21, primipara, had always been healthy and had menstruated naturally.

On December 14th, at 8 p.m., she went into her first labour. Mrs. Taylor, one of the midwives of the Royal Maternity Charity, saw her, and sent for Mr. John Davies, who, on examining by the vagina, was unable to detect any opening into the uterus. He could only make out a *cul-de-sac* of about one inch within the vagina. Thinking the case might require Cæsarian section, he sent to Dr. Hall-Davis, who sent the patient into the British Lying-in Hospital.

When I saw the patient at 8 p.m. in the hospital, I found, on examination, a short vaginal *cul-de-sac* of about an inch and a half in length, at the end of which no sign whatever of any orifice or os uteri could be made out by the touch. Having syringed the vagina with a carbolic lotion, I introduced a speculum, which enabled me to discern a minute pin-hole at the bottom of the *cul-de-sac*, from which a drop of blood and mucus was escaping. This was evidently the orifice of a canal leading into the uterus. It only admitted the entrance of a uterine sound, and some pressure was required to effect even this. Fur-

ther examination by the touch made it clear that a body of at least two inches in thickness occupied the interval between the pin-hole orifice and the mouth of the womb, and that this mass of tissue was traversed by a canal of the same diameter as that of the pin-hole orifice.

The condition just described was verified by my father, Dr. Robert Barnes, and by Dr. Edis. After consultation, it was determined to endeavour to open up an entrance through the vagina into the uterus, instead of resorting to Cæsarian section.

At 9.30 p.m., the patient having been placed under chloroform by Dr. Edis, I passed a Priestley's dilator into the orifice at the fundus of the vagina and dilated it. I was now able to introduce a Simpson's metrotome, with which I made incisions on either side to the extent of about an inch.

The opening thus made was gradually extended upwards for about two inches and a half on either side, until the uterine cavity was reached. The canal thus constructed was enlarged on either side by laceration with the finger. The presenting head could now be felt. The membranes having been ruptured, the first blade of Tarnier's forceps was applied, but, owing to the extremely limited space, I was unable to apply the second blade, the first blade was therefore removed. I now applied, without any difficulty, both blades of Barnes' long forceps to the presenting head. Slow and steady traction was made, by which the canal was gradually sufficiently lacerated to admit the passage of the fœtal head.

Considerable traction-power was required to effect the delivery of the head, which was in the occipito-posterior position. The child was a live male weighing seven pounds and a half and was delivered at 10.30 p.m., the whole operation having lasted a little over an hour. The placenta was expressed ten minutes afterwards. There was considerable hæmorrhage from the extensive area of incised and lacerated tissue. The operation was performed under the carbolic spray. The patient was syringed out

twice daily with a 1 in 50 carbolic solution, during her stay in the hospital.

The lying-in was unattended by any unfavorable symptom, the highest temperature reached being 101·2° Fahr. on the evening of the third day after delivery. On the evening of the fifth day after delivery the temperature was normal, and remained so until she left the hospital on December 28, 1881. The day after delivery the patient received the usual mixture, which is given in the hospital during the lying-in, as follows:—Quiniæ gr. ij, Acid. Phosphoric. dil. ℥x, Tinct. Opii ℥v, Ext. Liq. Ergotæ ℥x, water to ℥j. Beyond a dose of 160 grains of sulphate of magnesia on the fourth day, the patient required no other medicines of any kind.

On examination three days before the patient left the hospital, I found the os uteri at the end of a granulating canal of about two inches and a half in length. Had the patient not been about to return to married life, I should have introduced a Hodge pessary to prevent the union of the opposed granulating surfaces.

Cases of atresia vaginæ complicating labour are rare. When they arise they offer serious obstruction to labour, and, as in the case just described, necessarily require operative interference. I regard this case as illustrating almost the last degree of atresia vaginæ in which delivery can be effected through the pelvis.

Dr. EDIS stated that the patient originally presented herself as an out-patient at Middlesex Hospital some few weeks after her marriage, in order to ascertain if she were rightly formed, as her husband told her she was not like other women. On examination a short *cul-de-sac*, scarcely an inch long, was discovered in place of the ordinary vagina, a mere pin-hole aperture being detected in the upper portion. She was advised to come in for operation, but never returned. At the time of labour, at term, the condition of the parts was almost identical with that previously observed. There seemed to be a thick septum of dense tissue between the *cul-de-sac* and the cervix uteri. It was surprising how soon the obstruction disappeared after an incision was made, and the aperture dilated with the finger.

Dr. HEYWOOD SMITH reminded the Society of the case which he had reported some time ago, where there was no orifice whatever to be found, and where he opened the original roof and delivered the child without much delay, but in his case the vaginal roof was not so thick as in the case Dr. F. Barnes had just related.

MAY 2ND, 1883.

HENRY GERVIS, M.D., President, in the Chair.

Present—52 Fellows and 2 visitors.

A book was presented by Mr. C. E. Jennings.

John Edwin Cooney, L.R.C.P. Ed., and W. H. Jones, M.R.C.S., were admitted Fellows of the Society. John Gordon, M.D. (New Cross), was declared admitted.

The following gentlemen were elected Fellows:—Alexander George Duncan, M.B. (Stamford Hill); Peter Horrocks, M.D.; Arthur Jukes Johnson, M.B. (Ontario); Oliver Calley Maurice, M.R.C.S. (Reading); John Irwin Palmer, M.R.C.S. (Kingston-on-Thames); Francis Joseph Salter, L.R.C.P. Ed. (Leeds); Henry Sutherland, M.A., M.D. (Oxon); and Thos. Marshall Wilkinson, F.R.C.S. Ed. (Lincoln).

CASE OF EXTRA-UTERINE FŒTATION.

By J. A. MANSELL-MOULLIN, M.B., M.R.C.P.

THE patient from whom the accompanying specimen was removed presented herself among my out-patients at the Hospital for Women on April 9th, 1883. She was suffering great pain at the time, and was evidently

dangerously ill. She was admitted at once into the hospital.

The following is a brief account of the case:—The patient, æt. 36, had been married eleven years, but had never been pregnant. Her general health had always been good. Up to the first week in December, four months previously, the catamenia had occurred every twenty-one days and had been rather profuse, but unaccompanied by pain. Since that date they had been entirely absent. On a Sunday, six weeks before my seeing her, while exerting herself, she had been suddenly seized with intense pain in the lower part of the abdomen and fainted. Since then she had never been free from pain and was getting worse. Two days before admission she had had severe rigors.

On examination the signs of pregnancy were well marked; the breasts, naturally small, had increased in size, the nipples, large and dark, contained serous fluid; and the median line of the abdomen was darkly pigmented.

The abdomen itself was distended and tympanitic and exceedingly tender. On the right side a mass could be felt occupying the inguinal region and rising about four inches above Poupart's ligament.

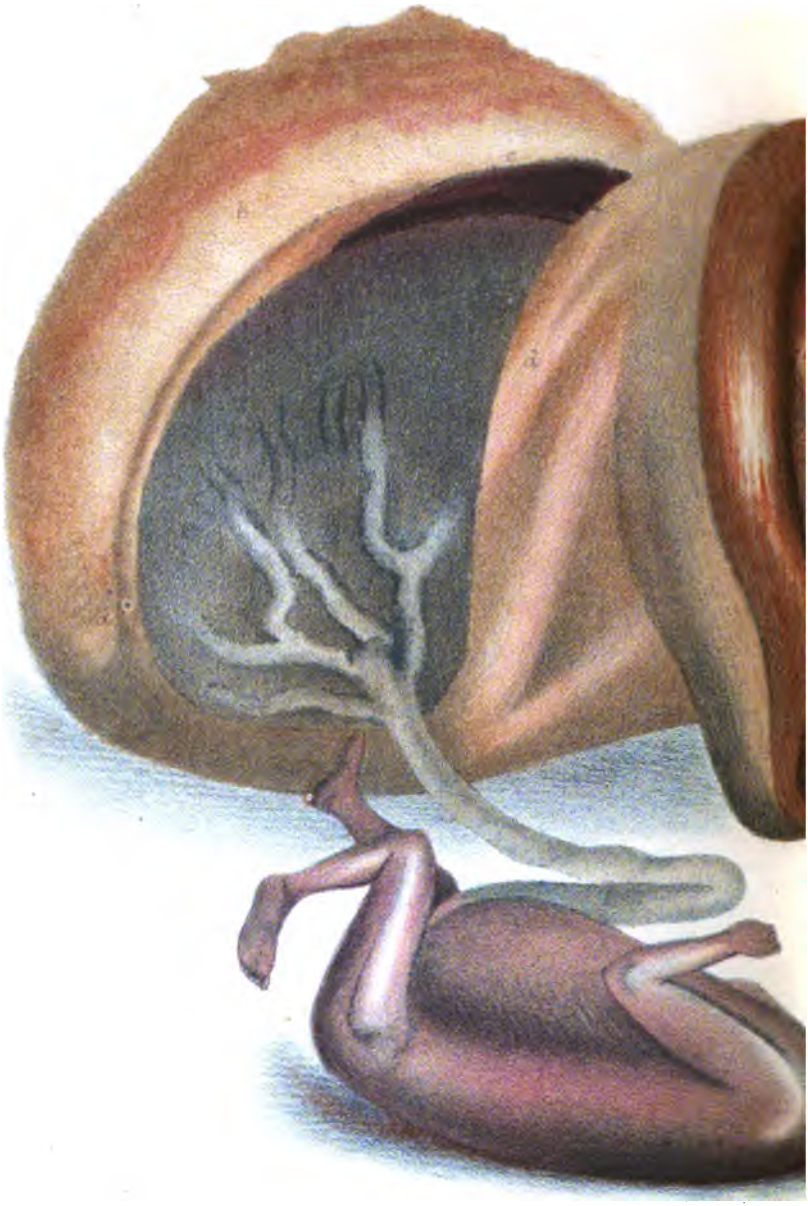
On bimanual examination the cervix was felt to be slightly soft, but the uterus was firmly fixed and pushed somewhat to the right side by some hard mass occupying the left side of the pelvis. No fluctuation could be detected. The sound showed the cavity of the uterus to be slightly enlarged and empty.

The patient was seen by my colleagues in consultation, but was then in too exhausted a condition for any operative interference and evidently sinking. She died within eighteen hours of being first seen.

For the particulars of the post-mortem examination and dissection of the specimen I am indebted to Dr. Bedford Fenwick.

Post-mortem (twenty-five hours after death).—On opening the abdominal cavity a small quantity of straw-coloured

PLATE



a Uterus laid open on anterior surface showing thickened walls and cavity lined with decidua

b Cyst laid open showing attachment of placenta to posterior wall.

c Cut edge of placenta

J. Westmacott, Invt.

a b Right Fallopian tube running over anterior surface of cyst

c Left Fallopian tube laid open showing thickening of mucous membrane

f Left ovary seen behind the broad ligament

Tom Bowman & Son lith

serum escaped. The omentum and intestines *in situ* were seen covered by a thin layer of quite recent clot, whilst there was a considerable quantity in each flank, particularly the left. Here and there the intestines showed signs of old peritonitis, being studded with patches of organised lymph. In the lower part of the abdomen the intestine was firmly adherent to the tumour, and in places the calibre of the intestinal tract was so narrowed by the constricting bands that on section afterwards it would hardly admit, at these points, an ordinary quill.

The pelvic cavity, more especially the false pelvis on the right side, was occupied by a tumour apparently cystic, and surrounded in great part by recent clot, especially at the upper limits.

The uterus itself was drawn slightly to the right of the median line. The cystic mass with the uterus was removed with great difficulty, being firmly attached to the intestines at the upper and posterior part, where the intestines were matted together by old adhesions.

On closer examination of the specimen, and on opening the uterus, the thickened decidua was well seen. The Fallopian tube on the right side was occluded just beyond the cornu of the uterus for the space of about half an inch, but afterwards became patent, and could be traced for some distance over the anterior wall of the cyst.

The ovary on the right side could not be found, but an abscess cavity in the wall of the cyst occupied the region in which it might have been expected.

The ovary and tube of the left side were healthy except for a patch of thickened mucous membrane in the middle of its course.

On opening the cyst a fœtus of about the fourth month was found attached by the cord to the lower and posterior wall of the cyst. The fœtal membranes were fastened to the cyst walls by bands of adhesion.

Remarks.—The pregnancy had advanced too far, and the adhesions to neighbouring organs had become too complicated to permit the character of the gestation to be

determined with certainty. Judging from the specimen I am inclined to believe it commenced as a tubo-ovarian, and then, secondarily, became abdominal. The ovum has formed for itself a cyst having the broad ligament and the Fallopian tube in front, and the intestines above and behind, the whole being matted together by inflammatory exudation and organised blood-clot. The hæmorrhage had taken place from the placental site.

Two points of special interest present themselves in the case, first, that the patient should have recovered from the shock and peritonitis incident on the first attack of hæmorrhage, which the post-mortem appearance showed to have been considerable. Secondly, with regard to the treatment. Had the exhausted condition of the patient allowed an exploratory incision, it would have been found impossible to release the intestines without interfering greatly with the placenta, and profuse hæmorrhage must have resulted. Had she applied for relief at an earlier period, when it was first evident that something was wrong, and had the diagnosis been equally certain, an exploratory incision would clearly have been the proper course of treatment. The placenta must have increased greatly during those six weeks.

The immediate cause of death was the hæmorrhage brought on by the exertion of the journey to the hospital.

Mr. Lawson Tait said he could not accept the statement that because the cyst was very adherent to some of the intestines no operation was practicable. Koeberle had laid down the rule some fifteen years ago that neither cyst nor placenta in such a case should be interfered with. All that was wanted was the removal of the fœtus and the drainage of the cavity. He for one must regret that such a case had not been the subject of surgical interference. He had operated seven times in such cases, and six of the patients made excellent and permanent recoveries. The last time he was present at the Society a discussion was raised by Dr. Wiltshire as to the propriety of operating in such cases at the time of rupture, and he (Mr. Tait) had expressed his determination to operate if ever he saw another case of the kind. Since then he had been called in to two cases. In one the hæmorrhage had been too serious to

hope for a successful result, and the patient died immediately after the operation. In the second case, however, the operation had been completely successful.

Dr. HEYWOOD SMITH said the case was admitted under his care, that he and some of his colleagues diagnosed it as a case of extra-uterine fœtation, but as the history of the rupture was six weeks previously, and the woman was from a more recent attack in a very low state, it was thought inadvisable to operate. The post-mortem seemed to prove that any operation would have failed, as the placenta was partly fixed to the pelvic wall, and if any attempt had been made to remove it the hæmorrhage would have proved formidable, and probably could not have been arrested.

Dr. BRAXTON HICKS thought that the plan advanced by Mr. Tait could scarcely be called a new departure, as the same had been suggested and discussed frequently in this Society for some years. Dr. Hicks agreed that where the tubal fœtation was capable of being snared there would be no difficulty; but the records of cases in the Society's 'Transactions' showed that the majority were not isolated, but that the placenta would be very difficult to remove, and the hæmorrhage very difficult of restraint. Again, he could not agree that the shelling out of the placenta by its dissolution was so safe as Mr. Tait had said; as he had found in a recent case he had operated on, where the patient three weeks after the operation, on the point apparently of recovery, died in consequence of hæmorrhage during the exfoliation of the last portions of placenta.

Dr. EDIS thought the majority of those who practised abdominal surgery were agreed as to the advisability of operating in cases where the diagnosis was clear. The difficulty usually met with, however, was in forming a correct diagnosis, hence the delay. Dr. Edis thought that more care should be taken in arriving at a correct diagnosis in all cases where hæmorrhage into the abdominal cavity was a prominent symptom. He quite agreed with Mr. Lawson Tait that in all cases where the symptoms were sufficiently grave, and a fatal termination apparently inevitable, an exploratory abdominal incision was perfectly justifiable with a view to deligating any bleeding vessel or removing the cyst if such a course was indicated.

The PRESIDENT, after referring to the comparative safety with which, now that the principles of antisepticism were better understood, the peritoneal cavity might be opened either for exploration or operation, said that while agreeing with Mr. Tait that the adhesion of the intestine to the cyst need not be considered a bar to operation, yet the condition of the patient at the time she came under Dr. Moullin's care certainly appeared adverse to any operative procedure.

Dr. CARTER saw the patient in consultation, but she was then in a very exhausted state, and he did not think any operative interference justifiable; the patient died ten hours after. From the post-mortem examination Dr. Carter did not think an operation would have been successful; the whole front of the cyst was covered with intestines matted together by old adhesions.

MYO-FIBROMATA.

The PRESIDENT showed three myo-fibromata he had removed a few days previously from the interior of the uterus of a patient who had suffered from severe metrorrhagia for several years. They were not grouped together, as is more commonly the case, but all separately embedded in and projecting from the inner surface of the uterine walls.

CYSTIC DEGENERATION OF SUBPERITONEAL FIBROID OF THE UTERUS.

DR. CARTER showed a fibroid tumour of the uterus which had undergone cystic degeneration. It was removed a week ago by abdominal section from a patient, aged forty-one, married one year. She had noticed firm enlargement of the abdomen for three or four years, but during the last twelve months it had rapidly increased. The abdomen was much and irregularly distended; there was distinct fluctuation over the left side of the abdomen, but not through to the right side; it was supposed to be ovarian in nature. The patient's aspect was exceedingly worn, pulse always over 120, and temperature of a night 101° to 102°. She was in constant pain. The tumour was adherent to the left parietal wall, and had very wide and firm attachments to the omentum, mesentery, and large intestine; the vessels in the omentum were large and numerous, and were the chief source of blood supply to

the tumour. The pedicle, which rose from the left side of fundus uteri, was about 1½ inch long and half inch in diameter, was transfixed and tied with silk; the vessels in it were small and few. The tumour weighed 3¾ lbs., and contained 7 pints of thick grumous fluid, colour of light pea-soup, the whole weighing about 13 lbs. The thickness of the walls of the tumour varies from half inch to 3 or 4 inches, and is made up of dense fibrous tissue; the inner surface is irregular and indented, and running across it are several thick bands of fibrous tissue. On the posterior wall of the uterus there was also a small sessile fibroid tumour which was not touched. The ovaries were natural. The patient has done well.

CYSTIC DISEASE OF BOTH OVARIES.

Dr. Carter showed the two ovaries removed a month ago from a patient, æt. 28, married eight months. Each tumour is made up of a large number of small cysts varying in size from a grape to a duck's egg. They now weigh respectively 1 lb. and 12 oz., but before they could be drawn out through the abdominal incision a great many of the cysts, which contained clear watery fluid, had to be punctured, so as to reduce the size of the whole mass. The cysts have not been examined to see if ova are in them, as was found by Rokitansky in a like case. Clinically the case was of much interest, as one of the tumours (the right) was jammed down in the pelvis, displacing the uterus forward against the pubic arch and downwards, so that the cervix projected through the vulva. Several of the small, rounded, tense cysts could be felt by vaginal and rectal examination as hard as fibroid nodules, for which they were mistaken. The left ovarian tumour was lying in the abdominal cavity. Menstruation had been for some time irregular as to the interval, which varied from six to eight weeks, the flow lasting about a

week. The patient had applied for treatment on account of the low position of the uterus. She has made a good recovery.

Mr. Lawson Tait asked if ova had been found in the cysts, for the tumours had all the characters of a very rare kind of tumour in which ova had been found, first by Rokitansky, secondly by Ritchie, and thirdly by himself. The peculiarities of this (Rokitansky's) tumour was dealt with at length in a book which he (Mr. Tait) had just issued from the press.

FŒTAL MONSTROSITY.

Mr. F. Cockell, jun., exhibited a specimen of fœtal monstrosity. He remarked that it is apparently acephalic. No cranial bones can be felt, nor is there any sign of the presence of hair; two ridges are, however, visible on its upper surface, which, from their shape, are suggestive of rudimentary ears. The right upper extremity is represented by a short digit; the left, which is inserted at a lower level, is longer and broader, and shows some attempt at the formation of a hand, possessing a thumb and little finger. The fœtal extremity of the umbilical cord shows a large solid protrusion. The penis is of fair size; there are no testicles, nor any orifice or depression to indicate the position of the anus. The lower extremities, which at birth were very œdematous, are proportionately well developed; the number of toes, however, are deficient on each foot, and the feet themselves bent in the position of talipes varus. In addition there is a large defect in the back.

Dr. Herman, on comparing it with the descriptions in the German text-book of Ahlfeld, regarded it as an example of that form of Acardiac fœtus, to which the term "Acardiacus acephalus" has been applied. (Plates from Ahlfeld's Atlas, illustrating different varieties of this form of fœtus, were exhibited at the meeting).

TWIN FEMALE MONSTER.

Dr. Chalmers exhibited for Dr. Hurford a twin female monster. It was born at nearly full term, there being nothing peculiar in the labour, in the course of the pregnancy, nor in former children. The child appeared normal and single as far down as the lumbar region; here it presented two pelves, with two vaginas and two pairs of legs. By a peculiar arrangement an extra pair of rudimentary hands and arms, joined together at their upper extremity, were attached by a common pedicle of skin to the abdomen just below the umbilicus.

Dr. Herman said the monster appeared to be one of the kind known as ischiopagus parasiticus. Some similar specimens were figured by Ahlfeld in his Atlas ('Die Missbildungen des Menschen'), plates from which he handed round.

HYDROSALPINX AND PYOSALPINX.

Mr. Lawson Tait briefly described three specimens, one of hydrosalpinx, which he had removed from a patient four years after he had removed one of Rokitansky's tumours. The patient had remained perfectly well until last December, when she began to suffer from all the symptoms of salpingitis with occlusion, and the physical signs were in accord with the symptoms. But being under the impression that some detached cysts adherent in the pelvis represented the second ovary and its appendages, Mr. Tait thought it hardly possible that the condition could be as he thought. In accordance with his customary practice, he opened the abdomen, found his diagnosis perfectly correct, and removed with much difficulty a densely adherent and much distended Fallopian tube with its ovary. The patient made an excellent recovery.

The second specimen was one of left pyosalpinx, occur-

ring in a recently married woman, and due, without doubt, to the existence of a latent gonorrhœa in the husband. The patient was most seriously ill from suppurating peritonitis. The left Fallopian tube was found full of pus, and it was removed; the cavity of the abdomen was cleaned out and drained.

Concerning such operations all that he could say was that what troubled him was, not that they were done too often, but that they were not done half often enough. There must be hundreds of women in London suffering horribly from pyosalpinx, and yet he had heard of no operations being done for their relief. Pyosalpinx was a disease absolutely incurable save by surgical operation, and without it most of the sufferers died.

The third specimen was a rotten and suppurating parovarian cyst, completely buried in the pelvic tissues, with not even a sulcus of the peritoneal cavity round it. It had to be completely enucleated over its whole area, an operation of an extremely difficult kind, and accompanied by severe hæmorrhage.

The contents of the tumour consisted of very putrid pus, which escaped in large quantity into the cavity of the abdomen, owing to the rotten state of the cyst. The peritoneum was carefully cleansed and drained, and the patient made an excellent recovery.

Dr. Edis called attention to a very exhaustive paper by Dr. Emil Noeggerath, in the first volume of the 'American Gynæcological Transactions,' on "Latent Gonorrhœa," in which the question of inflammatory mischief in the female shortly after marriage was fully discussed. Such cases were of frequent occurrence. Without any direct symptom of gonorrhœal discharge the patients began to suffer from malaise, backache, inability to walk, pain in lower abdomen, generally marked on one side, and other well recognised symptoms. No medical treatment was of use, except in allaying pain temporarily. Where we had reason to believe that there was any purulent or even mucous secretion in the tube, and the constitutional symptoms were severe, operative interference offered the only prospect of relieving the patient from a most distressing and painful condition—unsexing her more completely even than

removal of the tubes, inasmuch as she was unfitted for the duties of a wife.

Dr. Fancourt Barnes agreed that the result of Mr. Lawson Tait's operation justified the undertaking. He wished to know what were the exact symptoms in such cases which led Mr. Tait to operate.

A CASE OF EXTRA-UTERINE GESTATION SIMULATING SO-CALLED MISSED LABOUR.

By Adolph Rasch, M.D.

Mrs. E. S—, æt. 29, of Enfield, began to menstruate at 12 and was always regular up to 21, when she married. Had five children, including twins, and one miscarriage before her last child two years ago. Puerperal fever after last child. Patient believes herself to have miscarried on January 7th, 1882, after six weeks' pregnancy. Menstruated twice after, last time in March. After Easter she had frequent vomiting. Quickened in August and often felt fœtal movements. She got very stout, so that her bigness was much noticed.

On January 27th, 1883, when admitted to the Training Hospital in Tottenham, she stated that thirteen weeks ago when gone seven months in pregnancy, she had a sudden attack of spasmodic pain in the lower belly; half an hour afterwards the child gave an awful plunge and never moved again. Next morning a flow of bright blood began from the vagina and continued two days. Inflammation of the kidneys is said to have followed with swelling of the legs and general œdema, and inflammation of the lungs to have set in four weeks ago. A foul discharge from vagina was noticed during the last two months.

On examination the skin of the dark-haired patient was found much pigmented, especially on abdomen, which was of a brown colour. A fair amount of fat and some

general œdema. Face sallow, much freckled. Pulse 110; resp. 40; temp. 99°. Heart's sounds normal but feeble. Moist râles on both sides of chest, but chiefly at both bases.

Abdomen: a hard, painful swelling occupies the lower half of the belly up to nearly the umbilicus. The great tenderness forbids deeply pushing in the exploring hand. Os uteri high up in vagina against sacrum, cervix fixed, of nearly normal size and shape, not patent. Two fœtal metatarsi found in vagina and very foul bloody purulent discharge. *No fistulous opening in vagina.* A tumour cannot be distinctly felt from the vagina, the great tenderness then (and on all subsequent occasions) preventing a thorough bi-manual examination.

Very fetid discharge from the rectum, in which no fistulous opening could be reached by the exploring finger. Three motions passed this day are stated to have been loose, fetid, quite black, and containing soft pieces of decomposing tissue.

On January 31st, Mr. E. Davis, our resident surgeon, to whose notes I am much indebted, after dilating the os with sponge tent, could only introduce the tip of the finger, which felt some firm, conical mass. *Sound entered six inches,* and an elastic catheter was introduced to the same extent. Nearly a pint and a half of carbolic solution (1·60) flowed in from the irrigator before any fluid returned. General condition improved. Dr. Rasch saw the case for the first time and ordered a few drachm doses of Ext. Ergot. liquid which caused no pains. When repeated on February 3rd, severe pains set in and a soft, brown mass came away, which was believed to be the placenta, but which Dr. Rasch found to be a large coagulum without any trace of placental structure. (Patient now relates that the umbilical cord had come away just before admission to the hospital.)

February 6th.—Very anæmic; pulse only just perceptible. Hypogastrium very tender. Patient gradually getting weaker.

16th.—No power to retain fæces or urine. Moist râles at right base.

20th.—A little blood passed from vagina. Erysipelas faciei for the last two days. Deafness. Pulse 120. Yellow discharge, fetid.

24th.—Os uteri in same position and condition as before. Purulent fetid discharge from anus.

25th.—Death.

Post-mortem (February 27th, 3 p.m.).—Face swollen, body fat. Dark veins on abdomen. A few ounces of serum in pleural cavity, old adhesions. Lungs healthy with the exception of slight emphysema. Heart flabby, covered with fat, thin walls. Liver 6½ pounds, of a yellowish-white, fawn colour, friable. Gall-bladder contains pus-like fluid and mulberry-shaped gall stones.

Abdomen: Omentum and upper part of intestines with slight adhesions. A thin-walled cyst is opened which occupies the abdominal cavity below the horizontal umbilical line and is inseparably connected with the abdominal wall, the bladder, and the pelvic organs, so that nothing is seen except the blackish amniotic sac. A fœtus entirely detached, apparently of seven months, the skin of which was macerated into a greyish, adipocerous pulp, was lying across the lower part of the abdominal cavity; the bones pressed together into a long oval, the occiput towards the left side. No trace of the placenta could be found, nor any distinct sign of where it had been attached. The cyst had a large opening into the sigmoid flexure through a thickened mass in which the right ovary and tube were with difficulty found embedded. A finger could be easily pushed through this opening, which formed a short channel, the walls of which were in apposition and seemed to have acted like a valve. Another opening at the bottom of the cyst led into the uterus on its right side through which a finger could be easily pushed. *The uterus was of normal size* and contained no trace of decidua. Its cavity showed nothing unusual. Something resembling a corpus luteum was found on section in

the embedded right ovary. The kidneys were healthy. Large clot in abdominal aorta.

I thought this case of sufficient interest to deserve a record in our 'Transactions,' which already contain a great deal of valuable material of a similar nature. The close resemblance to so-called *missed labour* is the chief point in my case. *After seven months' gestation the fœtus dies, hæmorrhage sets in, but no labour follows. A few weeks later a fetid discharge commences from the vagina, followed* (*ten months after the commencement of pregnancy*) *by small fœtal bones. No fistulous opening in the vagina. The uterine sound passes six inches through the os uteri and a large quantity of fluid can be injected apparently into the uterus.*

At the first aspect I thought to have before me a genuine case of missed labour as defined in Dr. Barnes's excellent paper read before this Society, but my doubts were soon roused by the fetid discharge from the rectum, by the almost normal state of the cervix, the apparent lightness of the uterus, and the negative results from the exhibited secale. I considered it highly probable that the case was an extra-uterine pregnancy, the sac communicating after ulceration with the intestines and with the uterus. I believed the sound had entered the amniotic sac through a hole in the womb and that the fluid had gone the same way. I therefore disadvised the further use of the sound and had the case watched and treated symptomatically. The post-mortem examination proved this to be the right view of the case.

This case cannot, of course, prove that there is no such thing in woman as retention beyond the natural term of gestation of a fœtus which died after attaining viability, but it shows again how cautious we have to be before believing in an occurrence, of which until now only Dr. Barnes's case seems to be evidence. And even this case might be explained otherwise if one did not feel reluctant to doubt the accuracy of so excellent an observer as Dr. Barnes.

If my own case had lived longer the large opening at the side of the uterus would no doubt have become much larger and the exploring finger would have entered a large cavity or touched the fœtus which had ultimately found its way into the uterus. The resemblance to Dr. Barnes's case would then have been very striking. An autopsy of an undoubted case of a belated fœtus *in utero* remains at present the great desideratum.

Wise after the event, I much regret that I did not perform laparotomy. It would have been remarkably easy to remove the perfectly detached fœtus without opening the peritoneal cavity, as a reference to the post-mortem report will show. It certainly would have given the patient a chance, although the general state and the previous history were not encouraging.

The case presents other points of clinical interest which on the present occasion it must suffice to have put on record.

Mr LAWSON TAIT said that this case emphasised in a very striking and practical manner the rule he had been endeavouring to lay down, that in all cases of serious abdominal disease the abdomen should be opened as long as there was clear evidence that the patient was not suffering from hopeless malignant disease, and he was particularly gratified by Dr. Rasch's candid confession of regret that he had not adopted this rule in the case narrated by him.

Dr. GALABIN had met with one case which had been supposed to be missed labour. This greatly resembled the case related by Dr. Rasch, except that there was no opening into the bowel. The fœtus had died, and, some months after full term, there was a somewhat fœtid and sanious discharge escaping from the cervix. Not only the sound, but a catheter passed easily through the cervix a long distance into the cavity containing the fœtus, and allowed more fluid to escape. The os not admitting the finger, a tent was used to settle the diagnosis. The finger then felt a round smooth opening, resembling the internal os, about an inch and a half above the external, with a part of the fœtus there presenting. The patient died, and it was found at the autopsy that the uterus was sharply retroflexed, and that there was a smooth opening from the uterus into the extra-uterine sac on the convexity at the point of greatest flexion.

Mr. PHILIP JONES said, having had the case under my care previous to Dr. Rasch I will give the previous history. I was called to see her the first week in November. She had passed some blood and mucus, and was having pains in regular intervals, increasing in severity and frequency. On examination the os was with difficulty reached; scarcely dilated. Pains continued about twelve hours, but ceased after a dose of opium. The abdomen greatly distended that it was impossible for the patient to lie flat in bed or on either side, and was obliged to remain in a half sitting posture. Two days afterwards the pains returned, but again relieved by opium. The next day an attack of bronchitis occurred, lasting four weeks, with a feeble pulse, and temperature 102° to 105°; the latter part of the time there was great œdema of the legs and labia, that it was with great difficulty she passed her water. After the bronchitis subsided I introduced a tent in the os, which came away during the night with a discharge of fluid, which gave great relief to the patient. From that day the distension and swelling rapidly subsided, so the patient was able to lie down. A week afterwards she had another attack of bronchitis and crepitation; the discharge became more offensive, and a discharge from the rectum of a varied character, also bed-sores. In four weeks the sores had healed, and the bronchitis almost well, and now was able to send her to the Tottenham Hospital. I should have adopted a more active treatment, but they were unable to get a nurse, as she had suffered from puerperal fever in a previous confinement, and the house was very damp.

ON THE BEHAVIOUR OF THE UTERUS IN PUERPERAL ECLAMPSIA, AS OBSERVED IN TWO CASES.

By J. BRAXTON HICKS, M.D., F.R.S., &c.

THE condition of the pregnant uterus during a series of epileptiform attacks has not been very closely nor precisely observed, so far as I gather from the examination of the later text-books; nor has it occurred to me to meet with any paper on the subject.

I find but little mentioned, excepting that the uterus

participates in the general excitement of the muscular system, and the pains being severe often hasten the labour. But some authors do not go so far as this. It may be well, however, before proceeding further to give extracts from some.

Playfair says:—"If the convulsions come on during pregnancy, we may look upon the advent of labour as almost a certainty, and if we consider the severe nervous shock and general disturbance, this is the result we might reasonably anticipate. If they occur, as is not uncommon, for the first time during labour, the pains generally continue with increased force and frequency, since the uterus partakes of the convulsive action as well as the other muscles of the body. It has not rarely happened that the pains have gone on with such intensity that the child has been born quite unexpectedly. In many cases the advent of fresh paroxysms is associated with the commencement of a pain, the irritation of which seems sufficient to bring on the convulsions."*

Lusk, in 'Science and Art of Midwifery,' does not enter into the matter. He considers the great mortality of the fœtus in these cases to be owing to the great accumulation of carbonic acid in the system of the mother.

Schroeder only writes:—"Die Wehen sind bei der Eklampsie meistens Kräftig, ja häufig geht die Geburt in unerwärtet kurzer Zeit vor sich."†

Leishman says,‡"When rhythmical uterine contractions and other symptoms have indicated the commencement of labour before the manifestation of the convulsive phenomena, the effect which is produced upon the process is naturally watched with much anxiety. In a certain number of cases the obvious result is an acceleration in the progress of labour, when delivery is sometimes completed with great rapidity." "The process of labour," says Baudeloque, "in these cases, seems even more rapid

* Playfair, 'Midwifery,' 1st edition, vol. ii, p. 277.

† 'Lehrbuch der Geburtshülfe,' 7th ed., p. 711.

‡ 'Midwifery,' page 475.

than in others, as the child has often been found between the legs of the mother, although the instant before no disposition to delivery had been remarked." "Inasmuch as no facts have hitherto been recorded which prove the muscular system of organic life participates in the turbulent action of the muscles of animal life, it seems more likely that the rapid expulsion in these instances is due rather to deficient resistence of the latter than to abnormal force of the former. It is quite possible, however, that the pains may, by a reflex action upon the nervous centres—surcharged, as Barnes supposes, by an excess of nerve force—excite the expulsive efforts to such an extent as to induce this result. But this is widely different, as will be observed, from a morbid supernumerary force arising from convulsive action." "Some have supposed that uterine contractions have an important share in the etiology of eclampsia. That the disease may be manifested during pregnancy and after delivery shows clearly enough that this is not an essential condition, even although we may admit it as a possible cause. But in truth uterine action is much more likely to be the effect than the cause of eclampsia, for if there be any truth in the theory—to which prominence has been given in previous chapters of this work—that deficient aëration of the blood is a cause of uterine action, prematurely or at full term, we can have no difficulty in admitting that this condition exists during the paroxysm of eclampsia in a high degree."*

Roberts only remarks: "As a rule, an attack does not accelerate the course of labour, but in some instances it accelerates delivery in a marked degree." †

Meadows says, "In most cases the character and progress of the labour are in no way affected by these attacks; very often each return of pain brings with it a fresh convulsive seizure, and in a few cases it has been noted that (whether it is from the uterus partaking of the more

* Leishman, 'System of Midwifery,' p. 753.

† 'Practical Midwifery,' 1870, p. 289.

violent character of the clonic spasm or not) the labour is much more quickly terminated."* Again, speaking of the infant mortality in these cases, he remarks :—"The cause of this high death-rate is probably due partly to the violent contractions which occur during the fit, but chiefly to the blood poisoning which the child receives through the mother, and which may prove fatal by uræmic convulsions even after its birth."

King,† *Hubert*,‡ and *Byford*,§ make no allusion to the uterine condition during eclampsia.

Spiegelberg has the following :—"With regard to the relation which the pains bear to the convulsions, they have frequently been considered to stand in causal relation, and Kiwisch has especially maintained that the eclampsia never appears without labour pains. This is certainly not correct as the numerous observations of eclampsia during pregnancy show, and when we consider the fact that one has always to deal with premature labour, and that the first weak contractions would be overlooked, therefore against this objection can also be brought the contrary observations of convulsions in a perfectly quiet uterus. On the other hand, it is also correct that labour soon follows paroxysms during pregnancy, although these, as above remarked, may come again to a standstill; and further, that in the established disease (that is, the intoxication) labour pains determine the attack. I could observe this with remarkable exactness after the expression of the child and the afterbirth, if the uterus were mechanically irritated to produce powerful pains, or the expulsion of the afterbirth." "The pains themselves are not influenced in a definite way by this disease. But it appears to me rather frequently that the period of dilatation was more slow than usual under like circumstances. On the other hand, along with others, I have seen the period of

* Meadows, 'Manual of Midwifery,' 1876, p. 413.

† 'Manual of Obstetrics,' 1882.

‡ 'Cours d'Accouchements,' 1878.

§ 'Theory and Practice of Midwifery,' 1878.

expulsion violently hurried, but I have never found a tonic spasm of the womb participating in the motor irritation." *

For myself I must confess that, relying on the general idea conveyed in the above opinions and that the irritation of the uterus by the presence of the fœtus or by manipulation increased the convulsions, I had not made any especial observations till in the last two cases which have come before me.

Having in these had opportunity of carefully noticing the action of the uterus, I think it well to bring the facts before the notice of the Society in order to stimulate further examinations into this matter.

A lady, æt. 40, multipara; in the sixth month of pregnancy was seized with a severe epileptiform attack early in the morning after a very busy day. Though she had been œdematous she said she had never felt better.

The attacks continuing, I saw her about twelve hours after the first. She had repetitions of them every two hours, with nearly complete insensibility between, and deep stertor during and some time after each attack. The os uteri was expanding slowly, but not more than one finger could pass through. I waited for twelve hours and was able to notice the state of the uterus during and between the seizures. The uterus contracted gently every ten or fifteen minutes as it does during pregnancy and in early labour; relaxing after a minute or so, and becoming quite soft; the fœtal form readily felt. When an attack of convulsions came on, the uterus became intensely firm, and so remained for the space of ten to fifteen minutes without any change, after which it slowly subsided into the ordinary conditions of gentle contraction with relaxation.

The symptoms of coma increasing with a small, rapid pulse, I thought it best to deliver, which I did by gently dilating the os with the fingers, turning by bipolar method, and withdrawing the fœtus by gentle traction.

* 'Lehrbuch der Geburtshülfe,' p. 509.

It was worthy of notice that notwithstanding I employed a free, though not violent manipulation, no convulsions occurred during the removal of the fœtus nor for four hours after; two or three mild attacks followed at long intervals, and the patient made a satisfactory recovery.

I may incidentally remark that the stertorous breathing which followed each convulsion was relieved, not increased, by the exhibition of chloroform.

The second case, which was in a nervous girl of 19, primipara, who had attacks of convulsions every twenty minutes, so far as the relation of the convulsions to the contractions of the uterus presented the same phenomena, only the uterus contracted more frequently in its quieter action and after the convulsion did not remain so long firm as in the previous case, but still very much longer than when no convulsion was present.

The os uteri when I saw her, eight hours after the first attack, was the size of a half-crown, dilatable, and the head pressing into it. I drew off the liq. amnii, which was stained much with meconium, and advised the inhalation of chloroform, recommending assistance to be given by forceps as soon as the state of the os uteri permitted it. This was carried out and delivery easily accomplished by the forceps about twenty-two hours after the first attack.

In this case, however, it was important to note that neither the evacuation of the liquor amnii, nor fœtus, nor placenta, nor the use of chloroform seemed to produce any immediate marked effect. I saw her again eight hours after delivery and the convulsions were as frequent as before though slightly less prolonged. I found the uterus properly contracted and exceedingly firm, more so than usual, all the time of this visit.

Whether more extended observations will show that the uterus does become powerfully and prolongedly contracted coincidentally with a convulsion it is difficult to say, still, when the marked manner in which it occurred in these two cases is considered, it seems more than probable that it will be found to be an ordinary occurrence.

I am not able to state the exact relationship, as to the time, of these two conditions; in the cases narrated certainly the uterus was found very firm, though I examined it the moment I had notice of the attack of a convulsion.

A question naturally arises, is this powerful action of the uterus a cause of the convulsion, or the effect of it? or is the uterus simply participating in the general muscular irritation?

That it is of itself alone the cause appears to be contradicted by the observations of cases of labour associated with either clonic or tonic contractions, for I have never seen in the most violent instances any kind of eclampsia produced; nor have I ever observed in the most prolonged or difficult case of turning anything of the kind. And though it may be objected that this may be true in ordinary states, yet in these cases a higher degree of excitability may be present as an additional factor in the case.

With regard to its being an effect of the convulsions, it has been suggested by Dr. Leishman that the increased force of the pains might be owing to the carbonic intoxication produced by the laryngeal obstruction. This may be true if there is a general increase of force in the pains, but as to the particular increase at the time of the convulsions the almost immediate supervention of the contraction on the paroxysm precludes the idea that any increase of carbonic gas could have so quickly arisen as a cause of this particular contraction.

But the quietness of the pains which occurred between the convulsions in these cases scarcely bears out the arguments based on the assumption that the pains are generally intensified, be it either by the uræmic or carbonic intoxication or by the generally exalted excitability of the nervous system.

I think we can hardly assent to Dr. Leishman's remark that "we have no facts which prove the muscular system of organic life participates in the turbulent action of the muscles of animal life;" because when we observe an attack of eclampsia we have evidence of disturbances of

the heart, vascular system, and very visibly in the often rapidly changing states of the pupil of the eye. If, then, we were to add the uterus-action we should have sufficient evidence to show that the muscles of organic life are liberally affected during a paroxysm of eclampsia.

It is not necessary for me to enlarge on the advantage of accurate knowledge. In regard to the mother the point may appear rather as an interesting pathological question, but to the fœtus it is one of much importance. If we admit, as I believe we generally do, that the longer the attacks continue before the birth of the child the more danger it incurs by reason of the general intoxication of the mother acting on the fœtal blood; by so much more must we consider the danger increased if with every convulsion we find that a prolonged and very forcible trismus of the uterus takes place. And if this be the case, this increased danger is in direct proportion to the frequency of the recurrence. So that the abstraction of the fœtus from these influences at the earliest possible moment, compatible with the safety of the mother, would be the clear rule of practice; and that while still the assistance of anæsthetics like chloroform would be advantageous in mitigating the force of the attacks and their frequency, still, should it not produce an arrest of the powerful and prolonged action coincident with a convulsion, we should be scarcely justified in waiting passively for delivery should the uterus be in a state fit for giving assistance.

I may again call attention to the fact that in the second case the grip of the uterus was severe enough in the early stage of the case, before the rupture of membranes, to express meconium, so much so that I expected the child was already dead, but it was born alive.

Dr. Barnes regarded this paper, coming as it did from an observer so practical and so philosophical as Dr. Hicks, as of extreme value. He himself did not doubt that the immediate cause of the uterine contraction was due to the convulsion. Marshall Hall and Brown-Séquard had both shown that

carbonic acid excited contraction in involuntary muscle, and under the trachelismus and coma of the convulsion blood charged with carbonic acid was carried to the uterus. The risk to the child was not alone due to the hypercarbonised blood, but partly also to the continuous compression of the uterus upon the child. Dr. Hicks' observations led him to the reconsideration of a rule he had arrived at after great experience in these cases. That was to reject the old plan of the *accouchement forcé*, from which he had seen the most disastrous results. But under chloroform gradual dilatation and improved operative proceedings we might now carry out delivery earlier and with greater safety. But we must always subordinate regard for the child to the safety of the mother.

Dr. Graily Hewitt acknowledged the great and scientific value of the observations made by Dr. Braxton Hicks. The observations were novel and important. In his own practice he had been strongly impressed with the notion that the mechanical pressure of the gravid uterus on the renal organs exercised a powerful influence in causing puerperal eclampsia. The pressure thus exercised produced great disturbance of the abdominal circulation, and especially they acted on the renal circulation. He had in several cases found the greatest benefit derivable from taking steps by horizontal treatment of the patient, and by unloading the bowels to diminish this pressure. The association of albuminuria with the eclampsia present in so many cases was, of course, well known. He thought that in any explanation of the occurrence of eclampsia these facts would have to be regarded.

Dr. Routh stated, in confirmation of what had fallen from Dr. Graily Hewitt, that some sixteen years ago he had attended a case of convulsions in a parturient woman. Chloroform was given for hours, with very little if any amendment. In the course of the labour, however, the cord prolapsed. He therefore, following the teaching of Sir J. Simpson, placed the woman on her belly and knees to reduce the cord. The effect was marvellous; not only was the cord reduced as he expected, but all convulsions ceased from that moment. This seemed to show that the convulsions were due to pressure on the kidneys.

Dr. Braxton Hicks, in reply on his paper, said he hoped the Society would not think that he advocated force in delivering the child in eclampsia; because although we might forward delivery we nowadays had many helps at our command, viz. the dilatation of os by the hydrostatic bags, version by the bipolar plan, chloroform to relax the passages so that gentle traction need only be used to deliver in two or three hours. But although we might wait for spontaneous delivery often, yet when the serious symptoms continued to increase the time would arrive when assistance must be given, and this would be given earlier if we

knew that the uterus was at every convulsion powerfully and spasmodically contracted. Regarding the excess of carbonic acid in the blood, it could not be regarded as the initiatory cause of the convulsion, because the latter preceded the intoxication, and in regard to the remark that the pressure of the uterus was a cause of albumen, he had shown that the urine of a pregnant woman did not contain albumen naturally, nor was there albumen in many cases of convulsions before the first attack. As there were so many factors in these cases which still required investigation he had thought it useful to call the attention of the Society to the examination of the state of the uterus in eclampsia.

JUNE 6TH, 1883.

HENRY GERVIS, M.D., President, in the Chair.

Present—63 Fellows and 5 visitors.

Books were presented by Dr. Hickman, Dr. Paul F. Mundé, Mr. Lawson Tait, Mr. Hugh Thomas, and the New York Academy of Medicine.

Raheem Buksh, M.R.C.S., Peter Horrocks, M.D., and Henry Sutherland, M.D., were admitted Fellows.

Francis Joseph Salter, L.R.C.P. Ed. (Leeds); and Thomas Marshall Wilkinson, F.R.C.S. Ed. (Lincoln); were declared admitted.

The following gentlemen were proposed for election :— Charles Taylor Aveling, M.D. (Clapton); Robert Alexander Gibbons, M.D.; Charles Hurford, L.R.C.S. I.; James Hurd Keeling, M.D. (Sheffield); Aaron Langley, L.R.C.P. Ed.; Clarke Kelly Morris, M.R.C.S. (Spalding); Anundo Lall Sandel, M.B. Glas. (Calcutta); and Frederick Howard Tinker, L.R.C.P. Ed. (Hyde).

SPURIOUS HERMAPHRODITISM.

DR. CHALMERS exhibited an infant living, the subject of a spurious hermaphroditism or hypospadias. It was sufficiently marked to leave one in doubt as to the true

gender of the child, and it was further remarkable as being the second of the kind that the mother had given birth to. The genito-urinary organs of the former child, which died at a month old, were shown to the Society about a year ago. They were those of a female with a clitoris enlarged to the dimensions of a penis. The external organs of the second child resembled the other in everything but that the groove on the under surface of the clitoris (or penis) was towards its base completed into a channel so as to form a kind of urethra about two eighths of an inch long and through which the child urinated. No testicles could be found in the labia.

SARCOMA OF OVARY.

By George Elder, M.D.

The specimen now shown to the Society was removed by me a fortnight ago from a woman æt. 55. Its first detection by patient was eighteen months ago, when its size was small—a closed fist—and not accompanied by any discomfort or disturbance of health. Prior to her being referred to me, she had for some months been losing flesh and strength; but what most troubled her was weight while walking and pain referred to tumour accompanied with dyspnœa. Whilst for a considerable time it had remained stationary as to size, latterly it has rapidly grown, until it has attained its present dimensions.

There was a distinct ascitic wave on examination, and the tumour was freely mobile. Its attachment was so close to uterus, in fact, almost continuous with it, that I was doubtful whether it was uterine or ovarian in origin, but inclined to the belief that it was the latter. Its size was rather against its being a fibroma; still the nature of its superficies, its history, the fairly good condition of health of the patient inclined me to this view, although

at times the possibility of its being a sarcoma flashed across my mind.

At the operation it was found to be attached quite up to uterine body on right side and with a wide connection to broad ligament. It was evidently the right ovary which had undergone degenerative change.

Under the microscope it showed the spindle-celled structure of a sarcoma.

GENERAL AND CONSIDERABLE CONGESTIVE HYPERTROPHY OF THE UTERUS WITH ACUTE ANTEFLEXION AND PRESENCE OF AN OVARIAN CYST.

Exhibited jointly by Dr. Graily Hewitt and Mr. A. Q. Silcock, M.D., F.R.C.S.

Description of the specimen by Mr. Silcock, *commentary and remarks by* Dr. Graily Hewitt.

The specimen exhibited consists of the uterus and appendages from a patient, Jane M—, æt. 40, who was under the care of Dr. Handfield Jones in St. Mary's Hospital. She was admitted on March 27th, 1883, and succumbed four days afterwards to an attack of pericarditis and pleuro-pneumonia probably septic in origin. It appears that she had been suffering from what was considered to be a "cold" for about two months before admission. The specimen was removed after death by Mr. Silcock, Pathologist to St. Mary's Hospital, who has obtained particulars of the illness of the patient and who has made a careful examination, general and microscopical, of the specimen.

Dr. Handfield Jones has kindly given his consent to the publication of the case.

Mr. Silcock brought the specimen under my notice

thinking it, as it proves to be, a very unique and interesting one.

I much regret that little information concerning the previous history of the patient is forthcoming. It appears her age was 40. She had been twice married, but had never had a child. It is known that she had for some time—"all her life" it is stated by an acquaintance—"suffered from some internal complaint," and it is known that she had been a patient of two hospitals. Possibly further details may hereafter be elicited.

Mr. Silcock, who made the post-mortem examination, states that, with the exception of the heart and lungs, the other viscera were comparatively healthy.

The following is Mr. Silcock's description of the state of the pelvic organs, and having carefully examined the specimen together with Mr. Silcock, I am able to testify to its accuracy:

The uterus, with an ovarian cyst adherent thereto, almost completely filled the pelvic cavity, to the walls of which it was firmly bound by old fibrous adhesions. The whole organ from its great weight had sunk in the pelvis, pressing upon and displacing the rectum, and pushing the bladder upwards and forwards. Both uterus and bladder were adherent to it, but in other respects normal. The internal iliac vessels of both sides were involved in adhesions to the uterus and surrounding parts; the pelvic veins were greatly distended and enlarged; they are seen to be so at several points in the specimens shown, although they have been for the most part dissected away. The cyst connected with the left ovary was about the size of a cocoa-nut, multilocular, and firmly adherent to the fundus and posterior surface of the uterus. It projected slightly above the brim of the pelvis and contained turbid, serous-like fluid. The right ovary is seen to be in an early cystic condition, about the size of a large chestnut, appearing as a sessile, multilocular cyst, attached to the right extremity of the fundus.

The broad ligaments were encroached upon by the

Left half of Uterus with corresponding portion of adherent ovarian Cyst.

Dr Westmacott direxit

West, Newman & Co. lith

enlarged uterus, shortened, involved in old adhesions, and barely recognisable as such. The round ligaments are enlarged, their muscular structure being evidently hypertrophied, so contributing to their increase in size. The left Fallopian tube is much dilated, and its walls thickened; the right tube seems to be represented by a fibrous cord, which was dissected out of the adhesions around it, but as the fimbriated extremities of both were lost during the removal from the body, it cannot be identified with certainty. Their course through the uterine walls have not been traced, but a bristle could not be made to pass through the dilated tube (left) into the uterine cavity.

Examination of the halves of the uterus (specimens shown)—the section having been made as nearly as possible in the middle line—shows at once that its body is enormously hypertrophied—the original shape and symmetry of the part being nearly maintained—and acutely flexed at an angle somewhat less than a right angle upon the cervix, at the level of the os internum. The actual measurements of the parts are as follows:

Length of canal above bend . . .	$1\frac{7}{8}$ in.
,, ,, below ,, . . .	$\frac{7}{8}$,,
Width of uterine cavity at upper end .	$1\frac{1}{8}$,,
Greatest width of anterior wall . . .	$1\frac{7}{8}$,,
,, ,, posterior ,, . . .	$1\frac{3}{8}$,,
Width of roof	$1\frac{7}{8}$,,
Greatest transverse diameters . . .	$4\frac{1}{8}$,,
,, antero-posterior ,, . . .	$3\frac{1}{4}$,,

Weight = 2002 (20 ounces).

Before the uterus was cut up a bent probe passed into the cavity for a distance of $2\frac{1}{8}$ in. above the os externum.

The walls of the body of the uterus are composed of fibrous tissue and muscular fibre, exactly resembling, to the naked eye and microscopically, a hard myo-fibroma. The fibres run in all directions, the most external, however, as in the natural state of things, being chiefly longitudinal. Many patent veins are seen on the face of the

sections, having been cut across in various directions. A number of small veins are especially noticeable at the angle of flexure in the anterior wall, and a large one filled with thrombus in the posterior wall at the corresponding point. The walls of the cervix with the mucous membrane lining them appear to be unaffected, making allowance for the traction to which they have been subjected. The anterior lip of the os externum is flattened out and merged into the anterior wall of the vagina, whilst the posterior lip, less raised than naturally, is drawn backwards and continuous with the posterior vaginal wall, the posterior vaginal *cul-de-sac* being entirely obliterated. On neither lip are there any scars or fissures.

The cavity of the uterus contained recent blood-clot, the mucous membrane being partially thrown off and disintegrated. Microscopical examination of sections from various portions of the organ showed that in structure it did not materially differ from the normal, except in the numerical hypertrophy or hyperplasia of its elements, with perhaps an excess of connective tissue relatively to muscular fibre; the difficulty of distinguishing the young spindle-cells of connective tissue from those of muscular fibre should be borne in mind however. At the bend itself there did seem to be an excess of fibrous tissues, and to a greater extent on the convexity than on the concavity. Nowhere, either in body or neck, was there anything like an inflammatory cell-proliferation; nor was there any fatty or granular matter to be seen. The mucous membranes of the body seemed healthy; that of the cervix was not completely examined. As regards the vascularity, as judged by the number of blood vessels seen in the sections looked at, it was probably less than natural.

At first sight the specimens resemble a uterus, the body of which is the seat of a fibro-cystic tumour, but the localisation of the cysts to the ovaries, and the general and symmetrical characters of the enlargement both of the walls of the body and its cavity, negative this supposition.

Remarks on the case by Dr. Graily Hewitt.—This is undoubtedly a case of advanced hypertrophy of the whole uterus affecting every part of the organ about equally. The organ is acutely anteflexed, and the whole organ so much enlarged that it must have left little space in the pelvis for the other pelvic organs. It rested on the floor of the pelvis. I consider it pretty certain that the anteflexion and hypertrophy had existed for several years.

The case resembles some which I have had under observation during life, although I have never seen a case of simple hypertrophy in which the uterus was so large as in the present instance.

I would refer to a case figured at page 273 of the 4th edition of my work on 'Diseases of Women,' which represents a uterus in many respects like the one now shown; also to another described in the same volume at page 270. In both of these cases there was great hypertrophy. In one case the patient, æt. 51, had been more or less an invalid for years. In the other, æt. 36, the disease had probably existed for fifteen years. The drawings of these two cases (figs. 82 and 84) may be usefully compared with the admirable photograph of Mr. Silcock's specimen now exhibited.

The canal of the uterus in Mr. Silcock's specimen appears to be much dilated just above the angle of flexion. It is evident from consideration and description of the specimen that the cervical canal was subjected to great compression from the mass of the uterus above. This is, of course, not shown in the photograph, but it is probable that when the organ was *in situ* the exit of the contents of the cavity of the body of the uterus was materially hindered by the compression in question, and thus occasioned a virtual obstruction.

The very great distension of the venous plexus around the uterus, of which the specimen gives evidence, is interesting as showing a condition capable of impeding materially the circulation of the uterus. Doubtless the whole organ was in a sate of chronic extreme congestion.

The result was congestive hypertrophy of the uterus. This term appropriately defines, as I believe, the nature of the disease in this case.

As to the connection between the ovarian cyst and the flexion and hypertrophy of the uterus, judging from many clinically observed facts, there seems to be no reason for supposing that the flexion was originated by the ovarian cyst, but it is undoubtedly possible that the ovarian cyst may have accentuated, so to speak, the congestion of the pelvic organs already existing and originally produced by the uterine flexion.

This enormous growth of the uterus must have existed for some years, and must have materially interfered with the action of the rectum, and probably produced great disturbance of the functions of the bladder, to say nothing of the interference with the functional action of the ovaries. Perhaps additional information may be obtained as to the symptoms during life, but at all events the specimen offers interesting data for the decision of certain much discussed questions relating to the pathology of the uterus.

Dr. BARNES inquired if Dr. Hewitt's case had been attended by metrorrhagia. Like Dr. Hewitt he had recognised cases of this nature clinically, and had treated some successfully. This was done by the steady use, extended over several months, of iodine injections, one in eight. The action was remarkable; by a process of osmosis the iodine passed through the body of the uterus, checking the growth and promoting absorption of the hyperplastic tissue. In this way, in three very marked cases attended by serious symptoms, the uterus was gradually reduced to the normal size, and a complete cure was effected. In one case marked iodism was produced, proving that the iodine went through the uterine wall. In reference to Dr. Routh's remarks, Dr. Barnes said he was in the constant practice of painting the inside of the uterus with iodine carried on a probe, but in these particular cases injection was necessary.

The PRESIDENT would like to ask Dr. Hewitt where he drew the line between "congestive hypertrophy" of the uterus and myo-fibromatous growth. The naked-eye appearance of Dr. Hewitt's interesting specimen certainly closely resembled the section of a fibroid, and at one spot there appeared to be a small encapsuled tumour.

Dr. HERMAN pointed out that in the specimen from University College Museum exhibited by Dr. Graily Hewitt the bit of glass tubing employed to keep the two halves of the section apart was inserted into the uterine cavity, and it could be seen, from the indentation where the bit of glass pressed, that the pressure of this tubing did force asunder the walls of the cavity, and produce an appearance of slight dilatation. When the section was freshly made (before this bit of glass was put in) the anterior and posterior walls of the uterine cavity were no further apart than is usual in uteri which are not flexed.

Mr. LAWSON TAIT agreed with the President, and if the case had come under his own care he would not have troubled to construct so elaborate a theory for the case, but would have regarded it as an ordinary uterine myoma. The presence of cysts of the ovary confirmed this, for the views which he had advanced concerning the association of cystoma of the ovaries and uterine myoma had been amply confirmed by subsequent observers. He agreed with Dr. Barnes that the patient had probably suffered a good deal from menorrhagia, and he was of opinion that the cysts ought to have been removed, as by this means the uterine tumour would have been cured.

Dr. HENRY BENNET could testify to the value of iodine in the treatment of chronic inflammation, with hypertrophy, of the cervix uteri, extending or not to the body of the uterus. He had constantly used iodine for more than thirty years with benefit in such cases, principally in the form of tincture, simple or combined with iodide of potassium. He had never witnessed any unfavorable result. It was worthy of notice that when used to produce counter-irritation on the walls of the chest in phthisical disease, so long and so continuously as to render the skin as rugous as the bark of a tree, iodine never produced permanent mischief. When suspended, in the course of a few weeks, the skin recovered itself, and became perfectly white and natural. This clinical fact inclined him to prefer iodine to other agents to produce counter-irritation in these cases in young females Tartar emetic ointments, even leeches and blisters, often left unseemly marks for years or for life. In using solutions of iodine in the local treatment of uterine disease he introduced them freely into the cervical canal, but did not inject them into the uterine cavity proper. He had a fatal case from peritonitis early in life owing to the injection of a medicated solution into the cavity of the uterus of a young female aggrandised by the presence of a fibrous tumour. This case had made him very careful. He thought that a great deal, if not most, of what had been written about injecting the cavity of the uterus in uterine disease applied only to the injection of the cavity of the cervix. Between the two cavities there was a regular sphincter, which he was the first to describe, closed in health, which

prevented an injection penetrating unless the cannula was actually passed beyond it. When this precaution was taken, when the nozzle of the injectory cannula actually entered the uterine cavity, passing through the os internum, the injection of fluids was not free from risk. He had repeatedly, in his own practice, had serious symptoms after it—acute abdominal pain, &c. Probably the fluid in these cases passed through the Fallopian tubes into the peritoneal cavity.

Dr. MURRAY did not consider injecting the uterine cavity free from great risk. He mentioned a case where this procedure gave rise to instant pain and subsequent inflammation, the result most probably of the fluid passing through the Fallopian tube. The late Dr. Tyler Smith had mentioned a similar instance to him.

POLYPUS ADHERENT TO VAGINA.

DR. POTTER showed a polypoid growth adherent to the vaginal wall, from a patient who died in the Westminster Hospital on May 27th. She was admitted in a terribly anxious condition, having suffered from menorrhagia since the birth of her last child six years ago. She had been in several hospitals and discharged incurable. She was in such a low condition, and examination set up so much hæmorrhage, that nothing could be done, and she died a few days after her admission. At the post-mortem examination the uterus and appendages were found deeply in the pelvis and closely adherent to the adjacent structures. The ovaries both cystic, the uterus not much enlarged. The mass felt during life was closely adherent to the vaginal wall, and about the size of a small hen's egg, and was connected with the interior of the body of the uterus by a short thick pedicle. It was inseparably fixed to the vaginal wall.

SPECIMENS OF PYOSALPINX.

MR. LAWSON TAIT showed four specimens of pyosalpinx which he had removed from two patients since the last

meeting of the Society. One was a very remarkable case, as there was no history whatever to point to a source of origin, and the severe symptoms, which had brought the patient within measurable distance of death, had been in existence only a few weeks. Yet it was clear that the organs must have been diseased for a very long time.

In the second case the illness dated from the patient's only confinement some ten years previous to the operation. She had suffered from constant pain, aggravated by menstruation and marital intercourse. Within the last two years menstruation had become very profuse, marital intercourse had to be discontinued, and the patient had three distinct attacks of peritonitis, one of which nearly proved fatal.

In both cases the diagnosis was made unhesitatingly, and both patients are recovering.

November 16th, 1883.—The first patient made a very tedious convalescence, but a month after the operation a fæcal fistula formed and discharged for about a fortnight. It slowly healed, and in about six weeks patient was able to leave her bed. She is now convalescent.

The second patient made an easy and rapid recovery, and is now in perfect health.

PYOSALPINX.

Mr. Knowsley Thornton showed two Fallopian tubes greatly distended with pus (pyosalpinx), removed from a single woman of thirty, sent to him by Dr. Roper. There was little history, the patient merely complained of pain in the back and hips at the periods. Two irregularly-shaped tumours were plainly visible in the iliac regions, they were very hard and very mobile. One tube was opened during removal, and contained fully half a pint of pus; the other was removed entire; the ovaries were left behind.

November 16th, 1883.—The patient made a good recovery and has menstruated regularly since; there was much pain at the periods at first, but this is now less. Menstruation is, as before operation, scanty.

MYXOMATOUS DEGENERATION OF UTERINE FIBROIDS.

Dr. Godson showed a specimen which he had removed in the morning from a woman, æt. 61.

Happening to be in the district where she lived in January last, the vicar of the parish asked him to see a poor woman believed to be dying from cancer of the womb. He found her to be in a state of great emaciation, complaining of a profuse, watery, fœtid discharge from the vagina, with much pain in the lower abdomen. She had been discharged from the Soho Hospital for Women six weeks previously after an operation. Dr. Godson found a mass of substance, very soft, occupying the vagina, which protruded through the os uteri. He gave her an admission to St. Bartholomew's Hospital, and on January 20th removed with his fingers and his ovary-forceps a mass which he detached from the anterior wall of the uterus; it was semi-transparent, and gelatinous or mucous in appearance, and had all the characters of a myxoma under the microscope. The patient left the hospital on February 11th convalescent, free of discharge, but with a considerable tumour in the anterior wall of the uterus. A few days since she again presented herself, suffering from the same symptoms as when first seen, and a sloughing mass was found between the labia, protruding from the vagina. After admission to the ward this was found, as before, to be attached to the anterior uterine wall, from which it was removed by the wire écraseur. It would be seen that the lower portion was myxomatous, while the

upper portion presented all the characters of an ordinary sloughing fibro-myoma.

Dr. Godson considered that myxomatous degeneration of fibroids was extremely rare, it was the only case of the kind that had come under his observation.

A CASE OF ACUTE GANGRENE OF THE VULVA IN AN ADULT, WITH REMARKS.

By G. Ernest Herman, M.B. Lond., M.R.C.P. Lond., F.R.C.S. Eng.

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The case which I am about to relate seemed to me worth bringing under the notice of this Society, on account of the rarity of the form of disease of which it is an example. So few cases of a similar kind are on record, that I shall describe this one at length, giving many details of which the precise significance or importance may not at present be obvious.

I narrate the case from notes taken by Dr. W. B. Violette, my clinical clerk at the time.

E. H—, æt. 37, admitted into the London Hospital, November 4th, 1881.

Family history.—Father lived to age of 81, mother to 83. Of three brothers and nine sisters all are dead but one. One sister died from "ulcer of the womb," one from lung disease, and another in a lunatic asylum.

Personal history.—Menstruation began at the age of 11, and returned regularly, except during pregnancy, every three weeks, until seven months ago, when it became very irregular, the interval varying from two to four weeks, and the discharge being more profuse than usual, and

attended with increased pain. She was married at the age of 17, and had one child. She then became a widow, and since the age of 23 had cohabited with a man who passed as her husband, but had never been pregnant by him. When he was in employment she did nothing beside the house-work of her home, but for the past twelve months she had worked as a charwoman and washerwoman. Lately she had been living very badly; had had no regular food; had drank about two pints of beer per diem. About five or six months ago was in a sick asylum for a week, for an illness in which she spat blood; she was said to have been picked up in a fit. Before her marriage she had been subject to hysteria. Had never had smallpox, scarlet fever, or typhus fever.

For most of the facts relating to her illness before admission I am indebted to Dr. R. M. Talbot, Medical Office of Health for Bow, and his assistant, Mr. R. C. Moore. I have especially to thank Dr. Talbot for the trouble taken by him in investigating the patient's surroundings, and searching out possible sources of contagion. Dr. Talbot's account of her previous surroundings is the following:—"She lived in one room, not more dirty than thousands of others. Just an occasional case of scarlet fever in this district, none that I can hear of near her house. Cases of diphtheria being reported, none near her. Cases of typhoid occasionally cropping up. Smallpox in the house five months ago. Drains and watercloset said to smell very badly, therefore examined by me; no water in closet, but otherwise in order. A young woman living in the house, aged eighteen, who had been a prostitute since the age of fifteen, was lately attending a hospital for her throat. She lived with a young man who came to me on November 7th with a superficial ulcer on the penis, but no enlarged glands, or other symptoms of constitutional syphilis. This had quite healed on November 13th."

Present illness.—On October 25th, after finishing washing, she felt a sudden pain which extended up the right side of the neck to the right ear, and to the right temporal

bone. In about three quarters of an hour a discharge of blood came from the ear, and she was prevented from sleeping that night by pain which she described as "agonizing." Next morning a discharge of "corruption" came from the ear. On the 27th the pain extended to her back and as far as her ankles, and on the 28th she came to Dr. Talbot's surgery for advice. She was seen by his assistant, Mr. Moore, who found her so ill, that he told her to go home and go to bed. She complained of severe pain in the lumbar and iliac regions, of shiverings, and pains in the limbs and joints; also of pain in the ear, which was discharging. The tongue was thickly furred and tremulous; the pulse was 150, and temperature 101. Throughout the illness she had been menstruating. When Dr. Talbot saw her, he found considerable tenderness over the right temporal and mastoid regions; there were blood stains on the pillow, and dried blood about the angle of the jaw. At the apex of the left lung there was some fine crepitation. She was given Tr. Aconiti, ♏ v, every two hours. On October 30th Mr. Moore saw her. She complained of acute pain, which she had first felt the night before, in the "privates," and said she was still unwell. The labia were swollen and red, but on separating them no ulceration could be seen. There was no sign of herpes.

On November 4th she was admitted into the hospital.

On November 6th the following note was made by Dr. Fenton Jones, Resident Accoucheur:—"The patient is quite conscious, has not been delirious, no headache. No rash, no desquamation of skin, no suffusion of conjunctiva. Tongue tremulous, and coated with dirty brown fur. No appreciable congestion of fauces. Patient is somewhat anæmic; only slightly, if at all, wasted. There is a discharge of pus from the right ear. On the vulva there is a large ulcer, the surface of which is covered with black slough, and its margins red, swollen, and erysipelatous-looking. It extends on the right side to within an inch, on the left to within half an inch of the anterior commissure, and posteriorly to back of anus. Externally the

slough involves the labia majora, and internally the vagina is ulcerated as far as the finger can reach. No dyspnœa, a little rattling as the patient breathes, respirations 18 per minute, pulse 112. On the evening of admission the urine was withdrawn by the catheter, it was of specific gravity 1005, cloudy, contained a few epithelial and pus cells, a very slight trace of albumen, no sugar."

On the evening of admission the edges of the ulcer were touched with Paquelin's cautery, and the sloughing surface was dressed with linseed poultices moistened with a dilute solution of Liquor Carbonis Detergens (℥j ad Oj). On November 6th this was changed for wool soaked in Tr. Benzoin. Co., but this appearing rather to irritate the part, it was left off the next day, and the poultices renewed. The gangrene progressed slightly after the cauterization, but after November 7th it ceased to extend.

November 9th.—Sloughs began to separate, and during the morning there was free oozing of blood from the surface beneath, only controlled by firm pressure. About one o'clock in the day the bleeding became considerable from a pocket in the left labium majus; this was checked by a plug of ferridized cotton pressed firmly in, and kept in position by a bandage.

10th.—The bulk of the slough was removed in one piece, consisting of a large portion of each labium majus, a cast of the lower part of the vagina, the labia minora, part of the urethra, the skin of the perineum, and the skin round the anus. Since then she has lost control over the bladder, but retains power over the rectum.

14th.—The following note was made. The mucous membrane around the anus is much swollen. The skin around has sloughed, leaving a ring of granulations, the hindermost part of which is about an inch behind the anus, with the exception of a strip of skin to the left of the anus, about half an inch wide, which has escaped. On examination per vaginam the walls of the canal feel granular for about an inch and a half from the vulval orifice. Above this the vagina feels smooth and healthy.

The margins of the urethra are swollen and granular, as if there had been sloughing here. The edge of the granulating surface is well defined, and the skin around healthy, the surrounding inflammation having ceased. The patient complains of much pain, and there is tenderness in the left iliac region.

From this time the surfaces left by the separation of the sloughs progressed steadily towards healing by granulation. In the sixth week after admission an attempt was made to accelerate repair by skin grafting, but without success, owing to the difficulty of keeping the grafts in position.

The temperature on admission was 103°. It gradually sank till on the sixth day it fell to 99°. During the next four weeks it fluctuated irregularly between normal and 102°, usually, however, being below 101°. After the fifth week the temperature did not exceed 100°.

The treatment of the case consisted in, beside the local measures already mentioned, at first quinine and opium, with free stimulation. On November 13th she was put on a meat diet, with a quinine mixture. She kept her bed until December 20th, and was discharged on January 15th, 1882, the healing process being still not quite complete.

The blood was examined to see if the moving bodies discovered in cases of noma by my colleague, Dr. Sansom, were present; and Dr. Sansom was good enough, a few days after the patient's admission, himself to examine the blood; but no moving bodies were found.

The patient when first admitted (November 4th) was placed in a room by herself. On November 27th she was removed into a large ward where there were other patients. Soon after her arrival there, several patients already in the ward suffered from elevation of temperature, rash, sore throat, and other febrile symptoms. Thus on December 11th the temperature of a patient admitted for dysmenorrhœa rose to 101°. In another case, that of a patient awaiting operation for ruptured perineum, the

temperature on December 13th rose to 100°. In another case, on December 7th, a temperature of 102·4° was combined with a roseolous rash. In a fourth case, on December 8th, a similar rash appeared without increase of temperature. There were two other instances of similar symptoms, making six in all. In none of them did the pyrexia last longer than two days, nor was there anything in their course or symptoms to confirm the suspicion of a specific fever. I can offer no explanation of their occurrence.

Gangrene of the vulva in the adult receives little more than mention in most works on gynæcology, in some, not even that; and no author, so far as I know, has attempted to put together the recorded facts which illustrate the subject. I have, therefore, collected such published cases of acute gangrene of the vulva in adults as I have been able to find. They are too few to make it possible to establish any general propositions concerning them; but I think it will not be unprofitable to compare them with one another, and with the case just related. I do not propose to refer otherwise than incidentally to noma as it occurs in the child. The disease which I shall attempt to illustrate is acute gangrene of the vulva in the adult.

In the case I have described, the first cause of gangrene which it seems necessary to eliminate, is phagedæna, a source of the gangrenous process which is suggested by the fact ascertained by Dr. Talbot, that the patient lived in a house also inhabited by a woman probably having a contagious venereal sore. Contagion from this source is, however, only a possibility. The gangrene was quite acute, rapidly producing a large slough, and then ceasing spontaneously; it was preceded by inflammatory œdema; and it was almost symmetrical. It was not, like phagedæna,* a spreading ulceration, starting from a point of inoculation, and slowly advancing, crumbling down the tissues in its way. Therefore, even if inoculation from a

* For a full account of the peculiarities of phagedæna, see James, on Inflammation, 1832, p. 490, *et seq.*

case of venereal disease be assumed, I do not think it accounts for the peculiarities of the morbid process.

It is scarcely necessary to point out that the distribution of the gangrene was not such as could be accounted for by embolism or thrombosis of any particular vessel or vessels.

The patient was not diabetic, and I can find no instance of gangrene of the vulva occurring as a consequence of diabetes, although erythema of the vulva is known to occur in this disease.*

I cannot offer any theory of the connection, if any, between the inflammation of the ear and the gangrene of the vulva in this case.

The symptoms characteristic of any of the specific fevers were carefully looked for, but found absent.

The cases of acute gangrene of the vulva (other than phagedænic) in adults that I find recorded, may be divided into four classes. 1. Those associated with acute specific diseases. 2. Epidemic puerperal gangrene. 3. Cases like the one related in this paper, acute superficial inflammatory gangrene arising sporadically and independently of known cause. 4. Gangrenous erysipelas.

1. The published cases of gangrene of the vulva occurring in the course of acute specific diseases are not only few in number, but mostly so briefly described, as to be of little importance except from an etiological point of view.

Gangrene of the vulva is stated in some text-books to occur occasionally in connection with cholera and the specific fevers. I can find no published case of its occurrence with typhoid, scarlet fever, intermittent fever, or cholera. Goodeve† mentions having seen after the latter disease gangrene of the analogous parts in the male, the penis and scrotum, and gangrene of the scrotum in intermittent fever has been described by

* Marchal (de Calvi), 'Recherches sur les accidents diabetiques,' 1864.

† 'Reynolds's System of Medicine,' vol. i, 2nd edition, p. 698.

Schtschastny.* Marson† says that he has seen one case of gangrene of the female genitals following smallpox; the patient was a barmaid, and had a vaginal discharge prior to the illness, possibly gonorrhœa. Noma of the vulva as well as of the face following measles in children, is of course well known. Lange‡ gives three cases occurring during the course of typhus. In one of them both labia majora and minora and the perineum; in one, one nympha only; and in the other, the labia majora and minora and the entrance to the vagina were affected. The patients were aged 18, 19, and 28 respectively, and the genital affection was noticed on the sixteenth day in the first mentioned, on the twenty-second day in the second, and in the third its time of commencement is not recorded. Two of the cases occurred at nearly the same time; the other ten months before them. Sander§ gives two cases of gangrene of one nympha in the course of typhus; one patient was aged 16, the other 18, and the gangrene took place in the former during the second, and in the latter during the first week of the disease. So far, therefore, as these few cases go, they appear to show that gangrene of the vulva in adults suffering from typhus fever is apt to occur in young patients; that it may begin at any period of the disease; and that it varies widely in extent.

2. *Epidemic puerperal gangrene.*—Chavanne,‖ in 1852, described an epidemic of this disease at Lyons. The gangrene came on three or four days after delivery, and was preceded by feverishness and prostration. The first local sign was œdematous swelling of the labia. Then grey patches appeared on the inner surface of the labia and on any tear that there might be of the fourchette, and around these patches there was erysipelatous redness.

* 'Centralblatt für Chirurgie,' Nr. 8, 1874.

† 'Reynolds' System of Medicine,' vol. i, 2nd edition, p. 234.

‡ 'Deutsche Klinik,' 1860, S. 265.

§ 'Deutsche Klinik,' Nr. 7, 1861.

‖ 'Gazette Medicale de Paris,' 1852, p. 259.

At the end of two or three days these patches became limited either spontaneously or as a result of treatment (cauterisation). At the end of the first week or the beginning of the second, the eschars fell off, leaving superficial ulcerations which cicatrise naturally. In four cases the gangrene extended to the womb. Other cases occurred in which there was simply vulvitis with general symptoms like those of the gangrenous cases. Chavanne classes the disease with diphtheria. He could find no cause, either in the surroundings of the patients or the condition of the town. Out of 26 cases, 9 were out of health, debilitated; 17 were well, and of good constitution. The labours were natural in 20, instrumental in 6 cases. In some of the cases the labour was very easy; and some very difficult labours were not followed by gangrene. But it was observed that after difficult or instrumental delivery the swelling was more inflammatory, and the sloughing quicker. Chavanne attributes the disease to "epidemic influence," and remarks on the regular characters of the invasion and progress of the disease, and the identity of the phenomena in the different cases.

A similar epidemic which occurred in the Charité Hospital in Paris in 1869, has been described by Humbert.* The disease appears to have been identical in its phenomena with that described by Chavanne. Humbert describes 11 cases (which were all that he saw) out of 21 which occurred. In each of them, round or oval greyish sloughs appeared in the inner surface of the labia, and after falling off, left surfaces covered with healthy granulations. They were accompanied with febrile symptoms. In one case, after healing had begun, the edges of the wound again became gangrenous, the gangrene spread, and the patient died. Four others of the 21 died, 1 from peritonitis, 2 from "puerperal fever." Of the 11 cases personally observed by Humbert, one was delivered by forceps, in each of the others the labour was natural, 2 of them being premature.

* 'Archives de Tocologie,' 1876, p. 474.

Dubois * has described an epidemic which prevailed in l'Hôpital des Cliniques, Paris. The patients were taken ill within two or three days after delivery, with rigors followed by febrile symptoms. Then followed an appearance as of ecchymosis on the inner aspect of the labia, in cases where there had been no laceration, nor unusual prolongation of labour, nor instrumental delivery, in multiparæ as well as in primiparæ. Then the mucous membrane at these spots perished, and was replaced by ulceration. which only stopped after destroying to a greater or less extent the parts involved. In one case the perineum was attacked, the destruction extending from the fourchette to two inches behind the anus. In another the greater and lesser labia were destroyed, and the vaginal mucous membrane completely exfoliated.

Otto † gives an account of cases observed in Copenhagen, which corresponds with the descriptions just cited of other epidemics. There was swelling of the labia, sometimes combined with ulceration, which began on their inner surface. It went on with delivery, forming black crusts which were soon cast off, while the ulceration spread. It arose after natural, as well as after instrumental labour. It was only seen in the lying-in hospital, never in the town. Otto did not think it epidemic, because he could not trace contagion from case to case.

The close correspondence between the clinical phenomena of these epidemics, makes it clear that the same disease was prevalent in each of them. The form of gangrene observed in them was clearly not ordinary sloughing from pressure during labour; for independently of the fact that these gangrenes occurred after easy, and even premature labours, as well as after difficult ones, the pressure of the head on the maternal structures would not, in each case, kill isolated round or oval spots on the inner side of each labium. I shall not speculate upon the connection of the disease with diphtheria, suggested by

* 'Gazette des Hôpitaux,' 1853, p. 548.

† 'Schmidt's Jahrbuch,' Bd. xxiv, 1839, S. 195.

Chavanne. Humbert remarks that the morbid process was clearly not simply diphtheria, for this disease, although it affects wounds, does not produce sloughing of unwounded mucous membrane. It seems to me unprofitable to theorise as to the origin and nature of the disease present in these epidemics, because there is no opportunity at present of testing by observation any conclusions which might be formed; and some may think that, thanks to Mr. Lister, such epidemics are now of historical interest only. I have quoted them for the purpose of comparing them with the sporadic cases of acute superficial gangrene.

3. In my case (recorded in the beginning of this paper), the gangrene was superficial, affecting only skin and mucous membrane, not the deeper structures; it was self-limiting, it was acute, and preceded by inflammatory appearances; and these were preceded by febrile symptoms, accounted for by inflammation affecting the ear and the lung. There was nothing to indicate any specific fever.

A case which seems to me in most respects similar, is recorded by Lange.* His patient was aged 24 and was in the fifth month of her first pregnancy. She was taken ill with symptoms described as those of "gastric fever with constipation." On the sixteenth day the symptoms are said to have assumed a typhoid type. On the twenty-second day there was pain in the neck, and irritability of the palate and tonsils, and on the twenty-third day the affection of the genital organs was noticed. The process began with inflammatory œdema of the labia, upon each of which an ulcer formed. By the fourth day after the first complaint of pain in the vulva, the labia were converted into a large slough, the appearance of which the reporter compares to that of black bacon rind. He remarks that it presented the characters of noma, except that the part bounding it was not hard, not glistening, nor swollen. The part was cauterised with strong pyroligneous acid, but the gangrene progressed after the

* Op. cit.

application, and subsequently limited itself. The patient died on the thirty-second day of the illness, the ninth of the genital affection. The gangrene was quite superficial, being only a line and a half deep; another point in which difference from noma may be noticed. It seems to me impossible from the account given to feel sure what was the nature of the illness which preceded the gangrene. It is spoken of first as "gastric fever," then as "typhoid," and is headed "typhus." The length of the illness, and the absence of any account of crisis, seem to me against its being typhus; and on post-mortem examination, the internal organs were found healthy, except that the spleen was enlarged, which makes it doubtful whether the illness was typhoid.

A case apparently independent of any previous morbid condition, but in other respects resembling the foregoing, is recorded by Kömm.* The patient was aged 20, and after being much heated by dancing, complained of feverish symptoms with headache, and at the same time considerable burning pain in the labia, which became very red and swollen. On the fifth day of the illness she went to a medical man, who treated it as syphilis; under this treatment she got very much worse, the genitals became gangrenous, and she came to the hospital. The sloughs gradually separated, and under water dressing the wounds completely healed at the end of thirteen weeks, the external genitals having been totally destroyed.

A case of the same kind of gangrene following abortion is described by an anonymous reporter in the 'Gazette des Hôpitaux.'† A young woman miscarried without known cause when she was between two and a half and three months pregnant. She was then (the exact interval is not stated) seized with an acute inflammation of the vulva, which on the third day had produced gangrene of the labia majora, the labia minora remaining intact. The patient recovered well. She is said to have been of a

* 'Schmidt's Jahrbuch,' Sppl., Bd. i, 1836, S. 410.

† 1850, p. 142.

good constitution, and to have lived under good hygienic conditions; and no cause could be discovered for the gangrene.

A case which seems to me like the preceding, except that it followed delivery instead of abortion, is described by Williamson.* The patient was aged 22. The private parts began to be painful a fortnight after a natural labour. A week afterwards (that is, three weeks after delivery) the labia were found "in a mortified condition, coal black." The diseased action extended deeply into the vagina. After the sloughs had separated "the raw surface extended from the symphysis pubis to within a quarter of an inch of the anus." The os uteri was free from disease. The patient did well, except for contraction of cicatricial tissue. The disease was attributed to neglect, the patient having, for three weeks after delivery, had no change of linen, even of napkins. There was no erysipelas in the neighbourhood, but the patient said that several inmates of the house were suffering from typhus fever.

The cases just quoted all resemble one another as to certain features of the morbid process. They present an acute inflammation of the labia going on to gangrene, the process being bilateral, forming a large, black, superficial slough, and quickly ceasing spontaneously. In these points the morbid process differs from that of noma of the vulva as met with in children, for this disease (so far as I can find out from the accounts in books, and from conversation with those who have seen cases of it, which I have not) presents itself as an inflammation attended with much induration, and beginning in the cellular tissue, usually on one side, and producing not a black superficial slough, but deep and extensive ulceration. Kinder Wood,† whose description of noma of the vulva is quoted by most writers on the subject, draws a clear distinction between erysipelas infantilis going on to mortification and

* 'Edinburgh Medical and Surgical Journal,' 1855, Case Book, p. 25.

† 'Medico-Chirurgical Transactions,' vol. vii, 1816, p. 84.

noma; and it appears to me that the cases I have cited, occurring in adults, resemble the former rather than the latter affection.

The kind of gangrene they exemplify appears to differ essentially, in that it is preceded by, and the consequence of, inflammation, both from senile gangrene, and from the form of spontaneous gangrene described by Raynaud,* which is associated with phenomena not of inflammation, but of "local asphyxia," that is, of deficiency in the supply of oxygenated blood to the affected part; a condition quite different from the swelling and redness which ushered in the morbid process in the cases quoted.

When we compare the description of the sporadic cases of acute superficial gangrene with the accounts of epidemic puerperal gangrene, we see that they differ first in the important fact that in the one we have no evidence of origin or extension by contagion, while the other appears to prevail epidemically. Secondly, in the distribution of the local disease. In both the gangrene is preceded and accompanied by inflammatory phenomena, but while in the epidemic form the process is first manifested by the formation of circumscribed grey sloughs on the inner aspect of the labia (the gangrene, from its situation, being moist), in the non-epidemic cases the external integument seems to chiefly suffer, a comparatively dry black slough being the result. Although both forms of gangrene lead to the same destructive consequences, yet in their circumstances of origin and mode of commencement they seem different.

The morbid process to which the sporadic cases of acute superficial gangrene seem to me most closely allied, is that of erysipelas of the vulva. A case of this form of disease occurring after labour is described by Hardy and McClintock.† These authors state that it is the only case that they or Dr. Johnson had seen. I have seen one case,

* 'De l'asphyxie locale et de la gangrène symétrique des extrémités, Paris, 1862

† 'Practical Observations in Midwifery,' p. 45.

also after labour. Dr. Matthews Duncan* says that erysipelas of the pudendum is not uncommon, and is extremely dangerous in lying-in women. Erysipelas is a disease not very constant in its features; there are forms of inflammation which there is good reason to think are related to erysipelas, yet do not present all the features characteristic of that disease in its usual form.† A relationship between gangrene of the vulva and erysipelas is suggested by the occurrence in the epidemic described by Chavanne of cases of inflammation of the vulva without gangrene; and it offers an explanation of the cases of rash on the skin with febrile symptoms which followed the entrance of my patient with gangrene of the vulva into the general ward. The inflammation in these gangrenous cases should perhaps rather be called erysipelatoid than erysipelas, for in it there does not appear the tendency to spread which is generally considered one of the essential features of erysipelas. I find, moreover, on record a case of true gangrenous erysipelas affecting the genitals. It is reported by Ott.‡ In this case the husband was first affected, then the wife, with gangrenous erysipelas destroying both skin and cellular tissue, first of the genital organs, then spreading up over the abdomen, its progress being here arrested by the patients' death.

I may add, for the sake of completeness, another case of acute gangrene of the vulva, which I cannot classify with either of the above-mentioned forms. It is given by Hardy and McClintock,§ and was one of long-continued neglected venereal disease. There was extensive chancrous ulceration and condylomata. Death took place on the seventh day; the mucous membrane of the vagina and cervix uteri was converted into a mass of slough. The gangrene may in this case have been due to pressure

* 'Clinical Lectures,' 2nd edition, p. 168.

† See Hutchinson, "On Certain Diseases allied to Erysipelas," 'Med. Times and Gazette,' Jan. 6th, 1883, p. 4.

‡ 'Philadelphia Medical Times,' May 18, 1878, p. 517.

§ Op. cit., p. 46.

during labour badly borne by unhealthy tissues, or to phagedænic action, or to a combination of these causes. It does not instruct us as to causes which lead to sloughing of healthy tissues.

Summary.—In the present paper a case has been recorded of acute gangrene of the skin of the labia, perineum, and margin of anus, and the mucous membrane of the lower part of vagina and urethra, occurring in an adult without discoverable cause, the gangrene being preceded by inflammatory phenomena, and presumably due to the intensity of the inflammatory process.

Examination of the published cases of acute gangrene of the vulva in adults, occurring independently of venereal phagedæna, shows that they may be divided into four classes:—1. Those occurring in patients suffering from certain acute diseases, viz. the specific fevers and cholera. 2. Epidemic puerperal gangrene. This occurs in hospitals only, and begins as isolated round or oval sloughs on the inner surface of the labia, the process usually stopping when the sloughs separate, although sometimes going on to extensive destruction of the parts. 3. Acute gangrene occurring independently of contagion, and beginning with acute inflammation of the external genitals probably allied to erysipelas in its nature. 4. Rapidly spreading gangrenous erysipelas, affecting skin and cellular tissue, and identical with that seen in other parts of the body.

It does not seem to me that there is sufficient evidence to warrant a positive conclusion whether the differences between these classes are essential differences in the morbid process, or merely differences due to the circumstances of origin; but probably the latter is the case.

The PRESIDENT was sure he was but expressing the general feeling of the Fellows in thanking Dr. Herman for his able, interesting, and exhaustive paper on a rare malady. Rare, however, as it was, it was possible that some present had met with cases more or less resembling Dr. Herman's, and that further additions might thus be made to the material so carefully collated by Dr. Herman.

Dr. CLEVELAND suggested that the cause of the vulvar gangrene in the case recorded by the author might be of local origin. The woman's constitution was broken down, and it is not improbable she was ill-clad. Under such circumstances congestion, followed by a low or gangrenous form of inflammation, might be excited by a direct chill, through sitting on a cold and damp seat.

Dr. FENTON-JONES thought that Dr. Herman in his exhaustive report of the case before the Society had well demonstrated the obscurity of its origin. Though every particle of available evidence had been secured, it was still impossible to establish that it was due either to any of the usually assigned causes. Dr. Fenton-Jones threw out the suggestion that it might have arisen from local septic inoculation. The woman was menstruating at the time the cellulitis made its appearance, might she not have used a dirty napkin and become chafed? Cellulitis in other portions of the body being often produced by quite as slight causes.

Dr. MATTHEWS DUNCAN referred to the sloughing cellulitis of the scrotum in males, and to analogous cases in females. The disease in the male had been described by Liston and Paget, and he and others had recorded cases in the female. He had seen a case of puerperal sloughing of the vulva with cystitis; it resembled hospital gangrene, and proved fatal. After ordinary labours in primiparæ sloughing of the hymen was often seen, and sloughing of tags of lacerated tissue at the vaginal and vulvar orifices. Sloughing of the perineum occurred in some cases of deep laceration of the vagina above it, and he had described a case of linear sagittal sloughing after a difficult labour, the injury having the appearance of a simply lacerated perineum. Lastly, he had seen both labia gangrenous from the protrusion of a large fibroid with consequent injurious pressure.

Dr. HICKINBOTHAM (Birmingham) said he had seen two cases, one occurring in the case of a woman whose children were in the same room suffering from scarlet fever, and the other in a woman whose husband was the subject of erysipelas of the scalp; in both instances the attacks were extensive, and involved much loss of tissue.

Dr. HERMAN did not think a mere chill was alone sufficient to cause a morbid change of such magnitude. The gangrene in his case, and in some of those he had quoted, was quite superficial, primarily affecting the skin, and not appearing to commence in the cellular tissue. It was different from the disease described by Dr. Duncan* under the title of "progressive gangrene." He had therefore not referred in his paper to Dr.

* 'Clinical Lectures on the Diseases of Women,' 2nd edition, p. 170.

Duncan's account of that disease. The epidemic puerperal gangrene seemed, from the accounts given, to run a more acute course than ordinary hospital gangrene, the duration of which, if the patient survived, was, according to Mr. Barker,* from four to six weeks. In epidemic puerperal gangrene there was sloughing of apparently uninjured skin and mucous membrane; it was not the mere sloughing of tags of torn tissue, and did not begin as such.

* 'Medical Press and Circular,' 1873, i, p. 245.

JULY 4TH, 1883.

HENRY GERVIS, M.D., President, in the Chair.

Present—46 Fellows and 1 visitor.

Books were presented by Dr. Barnes, Dr. Breisky, Dr. R. P. Harris, Professor Macari, Dr. Routh, and the Middlesex Hospital Medical Staff.

Dr. John Gordon and Dr. Richard Unthank Wallace were admitted Fellows of the Society.

The following gentlemen were elected Fellows of the Society :—Charles Taylor Aveling, M.D. (Clapton) ; Robert Alexander Gibbons, M.D.; Charles Hurford, L.R.C.S.I. & L.M.; James Hurd Keeling, M.D. (Sheffield) ; Aaron Langley, L.R.C.P. Ed.; Clarke Kelly Morris, M.R.C.S. (Spalding) ; Arundo Lall Sandel, M.B. (Calcutta) ; and Frederick Howard Tinker, L.R.C.P. Ed. (Hyde).

The following gentlemen were proposed for election :— John Archibald, M.B.; Cursham Corner, M.R.C.S.; J. King Keer, M.D. (Leytonstone) ; Edmund King Houchin, L.R.C.P. Ed. (Stepney) ; Walter Rosser, M.D. (Croydon) ; and Frederick Stocks, M.R.C.S.

HÆMORRHAGIC EFFUSION.

Dr. Barnes exhibited a specimen of hæmorrhagic effusion into an ovarian cyst and the corresponding Fallopian tube. He believed that the hæmorrhage was due to twisting of the pedicle.

SEPARATION AND EXPULSION FROM THE UTERUS OF THE PLACENTA.

Dr. Champneys showed two demonstrations (illustrating (1) the separation, (2) the expulsion from the uterus of the placenta), which he had used in lecturing since May, 1882, and found useful.

1. To illustrate the separation of the placenta, two india-rubber bags with taps were taken, one was distended largely with air, the other not. To each had been attached with paste a piece of cardboard coloured red, to represent the placenta.

(*a*) The bag which had been distended was allowed to collapse, the "placenta" was detached by the *shrinking* of the "placental site" from the placenta, as in the third stage of ordinary labour. The "placental site" was seen at the same time to be greatly reduced in size.

The undistended bag was now inflated, and the placenta was detached by *expansion* of the "placental site" as in placenta prævia; the "placental site" was seen at the same time to be greatly increased in size.

2. To illustrate the mechanical advantage of the edgewise presentation of the placenta as against its presentation flat, fœtal surface forwards. A retort-stand with three rings, four, three, and two inches in diameter, was used. The placenta was placed flat on the largest ring (placed uppermost), and could with difficulty be forced through it. Through the second ring it could not be

forced. On folding it edgewise, fœtal surface inwards, it easily passed by its own mere weight through all three rings.

OVARIAN TUMOUR.

Dr. Alfred Meadows exhibited a specimen which he had removed from a lady, æt. 65, who subsequently recovered without a bad symptom. The specimen consisted of a large ovarian tumour which contained nearly forty pints of fluid, together with a fibroid tumour of the uterus weighing six and a half pounds, and also the whole of the uterus, except a small portion of the cervix which had been employed as the pedicle, the remaining healthy ovary, together with both Fallopian tubes, being also removed.

SUBMUCOUS FIBROID.

The President exhibited a uterus containing a large submucous fibroid which had undergone acute necrosis.

The patient, æt. 38, married, without family, was admitted into St. Thomas's on the 6th of June with a large intra-uterine fibroid, the uterus reaching to the umbilicus. There was a history of menorrhagia extending over many years. Quite recently she had had increased abdominal pain, and for this she came to the hospital. This peritonitic attack, as it proved to be, gradually got better, until quite suddenly, a fortnight after her admission, a large slough protruded from the vulva. This was speedily followed by severe peritonitis, collapse and death. Post-mortem examination showed a large submucous fibroid attached to the posterior wall and fundus of the uterus in a state of complete slough, and double pyo-

salpinx, with rupture of the right tube. This was probably the incident which immediately preceded her sudden fatal peritonitis and death. The suddenness and completeness with which this large fibroid sloughed without any obvious cause or premonitory symptoms, were points which appeared worthy of note.

SPURIOUS HERMAPHRODITISM.

Dr. Chalmers exhibited the genito-urinary organs of the child of doubtful sex (living) which he showed to the Society at its previous meeting, with a diagram of the same. The chief interest of the case lay in the difficulty of deciding to which sex the child belonged. From the clitoris being well developed and having apparently a portion of the urethra intact, the prevailing opinion seemed to be that the child was a boy the subject of a hypospadias, but the child died, and a post-mortem examination produced the uterus, and other appendages of a female.

HYDATIDIFORM MOLE.

Dr. W. A. Duncan exhibited part of a hydatidiform mole, which he removed from a patient whose history was so peculiar that he ventured to bring the case before the notice of the Society.

The patient is fifty-one years of age, has nine children, the youngest of whom is six years old; subsequent to last confinement the catamenia appeared with perfect regularity up to three months ago, but since then they have been profuse; two months ago the period was excessive without obvious cause; one month ago patient had a flooding which her medical attendant attributed to the

climacteric as nothing abnormal was felt on vaginal examination.

On June 23rd (twelve days ago), whilst trying to get something off a shelf beyond her reach, she had a profuse loss; the doctor now found the os uteri as large as a crown-piece with a mass projecting through it.

Dr. Duncan being called in consultation found the patient blanched from hæmorrhage; the abdominal walls were thick so that the uterus could not be felt, but there was resonance all over. Examination with a Sims' speculum revealed a dark red, somewhat friable, and granular mass protruding through the os, this was considered to look very suspiciously malignant; on passing the hand into vagina and three fingers into the uterus the growth was found to have a rather extensive attachment to the fundus uteri; with some difficulty it was cut off with an écraseur as close to the base as possible, on trying to remove it with clutch forceps it tore, and the surface appeared studded with small cysts, which on teazing out in water presented the typical appearance of a hydatidiform mole. The interior of the uterus was then scraped with a curette and several pieces removed. Since the operation there has been no hæmorrhage or pain and the patient is making an uninterrupted recovery. She distinctly says she was quite regular up to three months ago, and since then has been losing a good deal; there has been not a single symptom of pregnancy nor any swelling of the abdomen.

After some remarks from Dr. Barnes, the President, and Dr. Duncan, the specimen was referred to a committee consisting of Mr. Alban Doran, Dr. Champneys, and Dr. W. A. Duncan.

HYSTERECTOMY.

Mr. Knowsley Thornton showed the parts removed by hysterectomy from a lady, æt. 56. She had long been a

patient of Dr. Murray's with fibroid of the uterus blocking the pelvis. When Mr. Thornton was called in by Dr. Murray there was a cystic tumour in the abdomen and the uterus was out of reach by vaginal examination. There had been constant coloured discharge for more than a year. Mr. Thornton removed the ovarian cyst and then found that it was impossible to get a satisfactory ovarian stump and therefore removed the large fibroid uterus and other ovary applying a serre-nœud so as to include the whole pedicle. When the uterus was cut open it was found to be full of soft growth, hence the constant discharge. Mr. Thornton had not yet been able to examine this growth microscopically. He hoped to bring full details of the case before the Society in conjunction with Dr. Murray at some future date. The patient ten days after the operation was going on very satisfactorily.

Mr. Thornton also showed an ovarian cyst highly congested from acute twisting of pedicle, removed during acute peritonitis from a lady, æt. 53, who was also progressing satisfactorily.

In connection with this specimen he remarked that the cyst sent round by Dr. Barnes seemed to him to be a beautiful specimen of the effects of twisted pedicle, the blood poured into the cyst in this case having become partly organised. He could not agree with Dr. Barnes that the case was one variety of retro-uterine hæmatocele.

Mr. Lawson Tait asked if Mr. Thornton's specimen was taken from the right side, as he (Mr. Tait) had advanced an explanation of axial rotation of ovarian and parovarian tumours which depended on the action of the rectum, and he found that in nearly all such cases the tumour grew from the right side. He was quite of opinion that Dr. Barnes's specimen belonged to this group, the rotation having been sufficient to strangle the tumour and produce the effusion of blood, but not enough to cause its death. Subsequent absorption of the effused blood caused the appearances seen in the specimen.

FIBRINOUS POLYPUS.

Mr. Griffith showed a specimen, with a drawing, of a fibrinous polypus *in utero*, adherent by its posterior surface to the posterior wall of the body of the uterus and extending by a free portion into the cavity of the cervix. The polypus measured four inches in length, and was composed of blood clot undergoing organisation at the seat of adhesion where it extended into the uterine sinuses. No trace of chorionic or decidual structure had been found in three separate parts examined, and the microscopical appearances of the uterine fibres and sinuses were strongly in favour of the view that no recent pregnancy had occurred.

The specimen was taken from a widow, æt. 27, who died on the day of admission to St. Bartholomew's Hospital, under the care of Dr. Duncan, before any accurate examination had been made or a full history obtained. She stated that her last pregnancy had occurred two and a half years previously, that menstruation, which had been regular until five months before admission, had ceased, and that she had been losing blood and suffering from bearing-down pains a week.

She died somewhat suddenly from the bursting of a large perinephritic abscess into the peritoneum, the ureter being blocked close to the cervix by a large calculus.

Mr. Doran had a few minutes previously told him of a somewhat similar specimen in the Museum of the College of Surgeons, otherwise he knew of no other.

HYPERTROPHIED LEFT NYMPHA.

Dr. Fancourt Barnes showed the hypertrophied left nympha which he had removed from a single woman, æt. 46. There was no history to account for the growth. Dr. Burnet had examined the tumour and found it consisted of hypertrophied connective tissue.

THE OBSTETRICS OF THE KYPHOTIC PELVIS.

By Francis H. Champneys, M.A., M.B. (Oxon.), F.R.C.P.,
ASSISTANT LECTURER ON OBSTETRICS, ETC., AND ASSISTANT OBSTETRIC PHYSICIAN TO ST. GEORGE'S HOSPITAL.

The course of labour in the kyphotic pelvis is still imperfectly known, in spite of the fact that this pelvis is not extremely rare. This is no doubt partly due to the ease with which hump-backed women are often delivered (which led to Levret's saying that women who are hump-backed have easy labours), and perhaps partly to the mistake by which contraction of the pelvic outlet due to kyphosis was laid to the charge of supposed osteo malacia.

However this may be, it is certain that we have still something to learn on the subject, and it has been thought well to review briefly a certain number of cases of delivery through the kyphotic pelvis, especially with the view of ascertaining their course as influenced by the altered mechanism.

In spite of Levret's saying, delivery through the kyphotic pelvis is by no means altogether an easy or a safe process, as will hereafter be shown in speaking of the results to mother and child; but here we may observe that it calls not seldom for craniotomy and sometimes even for Cæsarian section.

Cæsarian section was performed in the cases related by *Lange* and by *Jenny*. *Martin's* case ('Zeit. f. Geb. u. Frauenkr.,' 1, 2, 1875, S. 339), was one of a kyphoscoliotic pelvis.

Several cases on record required craniotomy. Thus in that related by *Kleinwächter*, where kyphosis had followed injury, the head was high in the pelvis, in the first vertex position, the small fontanelle to the left and

in front, the sagittal suture in the right oblique diameter. The head had to be delivered by cephalotripsy after perforation.

Braun's case required craniotomy.

In *Schmeidler's* case the head was in the third vertex position, the forehead anterior; no rotation followed. Perforation was necessary.

These cases, however, are quickly passed over, inasmuch as perforation at once puts a stop to all questions of mechanism, which is our chief inquiry at present.

In the remaining cases which I have collected, the measurements of the pelvis and fœtal skull are too few to enable any definite laws to be laid down, and the accounts are often meagre. Still, sufficient information can be extracted from them to show at least the points of interest.

Herbiniaux's case was one of dorso-lumbar kyphosis, but it seems not unlikely that some scoliosis was also present, as the right ilium is said to have been two fingers' breadth higher than the left.

The child's face presented towards the left iliac fossa (second position): during labour a loud crack was heard, and the pubic bones were found loose after delivery. The subsequent mechanism is not described. The child was born alive.

In *Chiari's* case a living child was born after a natural labour. It was noted that the head retained a transverse position deep in the pelvis.

Breslau relates two labours in the same woman. In the first labour the child was born alive after an easy forceps operation.

The second labour was prematurely induced in the thirty-fourth week. The child presented by the head, but spontaneous turning occurred and it was born footling. During labour the pubic arch (but not the tubera ischii) is said to have become expanded, though before labour it could not be expanded by the fingers; after labour it recoiled.

Birnbaum relates in all three cases, which are not,

however, quite to our purpose, as they refer to a pelvis which was virtually a "pelvis obtecta," the head having passed through two distinct straits, one above the brim, one at the outlet. Something, however, may be learnt from the course of the head through the pelvis.

In his first case (1 para) the head presented with the occiput to the right (second position) and sank deep in the pelvis; forceps then became necessary, the head rotating during their application *posteriorly* (from the second to the third position), towards the right sacro-iliac joint. The right (posterior) side of the head was flattened, the left (anterior) side protuberant, and on the right parietal bone, towards the anterior part, was a nearly quadrilateral indentation with fractured bone beneath it. The child was stillborn.

In the second labour of the same woman the small fontanelle presented to the left (first vertex position) and the head was much flexed. The child was delivered (stillborn) by forceps. The head was indented on the right (anterior) side, and over the right anterior "lateral fontanelle; the left side of the head was protuberant. The pressure marks on the anterior side of the head were attributed to pressure of the symphysis (?)

In his third case (in another woman) the head presented in the second position, was persistently transverse, and was incessantly pressed into the hollow of the sacrum. The child was delivered (stillborn) with forceps, the skull being fractured. The mother died.

Moor relates the history of four labours in the same woman.

In the first labour a living child was delivered by forceps.

In the second labour, which was induced at the thirty-fourth or thirty-fifth week, the head presented, but spontaneous version occurred and the left foot came down from the right side, with the toes pointing forwards. The body followed spontaneously as far as the shoulders, the back posterior. The pubic arch (as measured by the fingers side by side) was proved to expand during labour,

and to recoil after labour so as to leave it narrower than before labour. The head was flattened transversely, elongated antero-posteriorly, no fissures or indentations. No traction was used, and the child was stillborn.

In the third labour the face presented and a living child was born spontaneously.

In the fourth labour the head presented, with the occiput to the right; the uterus ruptured spontaneously. The patient died.

Hugenberger gives two labours in the same woman (who had previously been delivered, apparently without assistance, of two living children).

1 (third labour). Head presented with occiput to right side behind (third position), some flexion being present, and was delivered by forceps without any rotation. The forceps had seized the head, the left blade on the right cheek, the right blade on the left side of the occiput and adjacent part of the nape of the neck. There were also marks "of the front wall of the pelvis" on the left frontal eminence.

2 (fourth labour). The occiput presented in the fourth position (left occipito-posterior). Under traction by the forceps the occiput turned somewhat forwards and became more transverse, the flexion of the head was also increased; the shoulders followed in the right (opposite) oblique diameter, with difficulty. The child was born alive. The left blade of the forceps had marked the posterior third of the right parietal bone and the right half of the occiput, the right blade had marked the left superior maxillary and labial region. The mother died.

Stadfeldt gives two cases. In the only account accessible to me the details are somewhat scanty.

In the first case no mechanism or presentation is recorded. The head was perforated and the mother died.

Of the second case it is recorded that a child's head, the transverse diameter of which was eighty-five millimetres, passed through a pelvis, the intertuberous diameter of which was sixty-five millimetres (implying an expan-

sion of the pubic arch to the extent of two centimetres (twenty millimetres).

Hoening relates that in his case before labour the head had a more or less transverse position (due as usual to the shape of the uterus). As soon as the cervix was passable for one finger the head was found to occupy the second oblique diameter with the small fontanelle to the right and in front, but the sagittal suture was more nearly antero-posterior than transverse (second position); and the lower it descended the more antero-posterior it became, passing the narrowest part quite antero-posteriorly. As to the termination, the accounts are not quite clear, for on p. 53 it is said to have become quite antero-posterior before it was born, while on p. 8 it is said that the posterior part of the left parietal bone passed first under the symphysis pubis and the face passed over the perineum. Forceps was then removed, the small fontanelle pointed to the right side and anteriorly and then turned so that the small fontanelle pointed to the right side and posteriorly, turning through more than a right angle; the arms had to be freed and the shoulders passed in the same oblique diameter as the head. Perhaps the two statements mean that the posterior rotation of the head followed its passage out of the ligamentous pelvis, and was in fact external rotation due to the passage of the shoulders in the same instead of in the opposite oblique diameter. The left (anterior) parietal overlapped the right. The left blade of the forceps lay over the external side of the left frontal bone and over the external angle of the left eye. The child was born alive but soon died. The mother also died.

Chantreuil relates two cases.

The first case was one of dorso-lumbar kyphosis (more dorsal than lumbar). The interischiadic diameter, as measured with callipers, was nine centimetres. A child weighing 1740 grammes was spontaneously and prematurely born. The height of the patient was 1 metre 26. There was no scoliosis, no trace of rickets, no sign of abscesses.

The child's biparietal diameter was eight centimetres. No account is given of the labour except that it was quick and easy. The mother died.

In the second case no account is given of the labour except that it occurred prematurely at (probably) the eighth month and was natural and rapid. The sagittal suture was nearly antero-posterior. The mother died.

Kezmarszky relates that in his case the small fontanelle was to the right and that forceps was used.

Champneys' Case.

Jane H—, admitted to the General Lying-in Hospital February 23rd, 1883, æt. 35, 3 para; married six years; pregnancies three, confinements two (both premature), miscarriages one (second pregnancy).

Family history.—Mother died while patient was a child. Father died ten years ago from "old age." Patient has two brothers and four sisters alive, and has lost four others from smallpox. She is the seventh child in her family; all the living brothers and sisters are healthy, except that one sister has abscesses in the neck. Does not know when she began to walk.

Previous illnesses.—Measles æt. 12; scarlet fever æt. 12 also. Never had smallpox. After puberty had abscesses in the neck. Generally has a winter cough. When five or six years old had some necrosis of the metacarpal bones of the left hand, and also abscesses in the calves and near the left elbow, which discharged for about three months. When quite young, before she could walk, one of her sisters who was carrying her let her drop; the abscesses in the legs seemed to follow this, and the back began to get curved, but it has not got worse as long ago as she can remember.

Menstrual history.—Menstruated first at about thirteen, duration about four days, quantity moderate, pain slight in back, preceding the flow; no shreds, occasional clots as

large as a walnut; recurrence as a rule monthly or a few days more. No change up to the present time.

History of previous confinements (from husband and sister after her confinement).—She was confined on May 27th, 1880, and on June 4th (the eighth day) "went off her head;" she was kept at home for a month and then sent to Wandsworth Asylum. During the month at home she was sometimes violent, would not take her food, and had to be held in bed. Once she jumped out of the window, and the husband "just saved her by catching hold of the hair of her head." After that (about July 4th) she was sent to the asylum; she left it "cured" on September 1st, 1880.

Next came a miscarriage.

On Dec. 17th, 1881, she was confined prematurely of twins. On December 26th (ninth day) she "went off her head" again. She was attended at home for a while but was so difficult to manage that she was again sent to Wandsworth on February 1st, 1882, and remained there till March 25th (seven weeks). The husband always knew when she was going off her head by her "wild look." Usually she is a very quiet woman and a good wife. Last time in the asylum she "set fire to her nurse." She is quite herself between her confinements.

The *first child* was born just over the eighth month. She was in labour about four hours. The child was delivered alive with instruments, and died of "thrush" at two months old.

The *second labour* was spontaneous; she was delivered prematurely, at a little over seven and a half months, of twins, both of whom died the following day.

Present pregnancy.—The last menstruation began June 22nd, 1882, and ended June 25th; it was in all respects as usual. When seen she was in the thirty-fifth week. The date of quickening had not been observed. During her pregnancy she had been fairly well, and her only discomfort had been occasional morning sickness.

In view of her deformity she was advised by a medical

man to apply to the hospital, and she came to be seen on February 21st, 1883.

Present condition.—On admission she was seen to be a quiet, rather delicate woman, dark blonde, of very short stature, face somewhat prognathic. Legs, arms, and clavicles quite straight, and presenting no signs of rickets. Her belly was very pendulous, and hung down in front of her thighs.

The back presented the following peculiarities :—The "vertebra prominens" unusually prominent, forming the most projecting part of a curve convex backwards, commencing apparently half way down the cervical region and extending to about the fourth or fifth thoracic vertebra, which was the deepest point of a deep hollow (concavity backwards). From this point, again, another curvature, having its convexity backwards, began, and culminated at the second lumbar spine. There was no angle, the curve being gradual. No marks of abscesses, &c. The bottom of the lowest curve (convexity backwards) ceased about the upper part of the sacrum. There were thus two convexities and one concavity in the back, the first a backward convexity involving the lower cervical and upper thoracic regions, the backward concavity occupying the middle thoracic region, and the lowest backward convexity occupying the lowest thoracic and lumbar regions. The spines in the last of these curves were very slightly to the left of the middle line but hardly perceptibly so. The ribs were modified in accordance with these arrangements, they seemed perfectly symmetrical on both sides.

The symphysis pubis was felt to form a rather prominent beak. There was the scar of an abscess in the left groin (said to date from about five years of age), bounded internally by the tendon of the adductor longus, which was unusually well marked and prominent on the left side. (She said she had been treated for this as an out-patient at some hospital.) Lower false ribs almost touching crests of ilia.

Per hypogastrium.—The back of the child apparently

to the right, small moveable parts to the left above; head could not be distinctly felt.

Per vaginam.—The rami of the pubes were felt to meet together at the symphysis pubis at a very acute angle, in which the urethra was felt as a smooth, round cord, larger than the middle finger. Following the descending rami of the pubes the tubera ischii were felt to be very close together, but the patient was not thin enough for an external measurement. Their inner borders were tuberous. The promontory of the sacrum could not be reached. The inclined planes of the ischia could be plainly felt to slope downwards and inwards, and the great sciatic notch could be plainly explored as far as the spine of the ischium on both sides. The coccyx projected markedly into the pelvic cavity, but the sacrum could not be felt high enough up for its curve to be described. The lesser sacro-sciatic ligaments could be felt on both sides, especially on the left, where the upper and lower borders could be plainly felt as sharp bands.

Cervix uteri lay high up and far back. No fœtal part could be reached. An attempt to divaricate the tubera ischii led to no tangible results; pain was caused at the points of pressure but not in the region of the sacro-sciatic joints.

Two days later (February 23rd) the cervix was found passable for the finger, soft; through the os internum the head could be felt but no suture. From the os externum to the head lying on the os internum measured one and three quarter inches.

Auscultation.—Fœtal heart 160, loudest six inches from navel upwards and to right, towards lower end of ninth and tenth ribs. Uterine bruit faintly heard four inches to left of navel, on a level with navel.

The following measurements were taken:

Height . . . . . 4 ft. 1¼ in.

Pelvic inclination.

1. Standing:

Height of perpendicular of triangle. . 3 „

Length of hypothenuse (conj. ext.)	$6\frac{3}{4}$ in.
Pelvic inclination	= 25°
2. Sitting:	
Height of perpendicular of triangle	$1\frac{3}{4}$ „
Length of hypothenuse (conj. ext.)	$6\frac{3}{4}$ „
Pelvic inclination	= 15°
Base of ensiform cartilage to upper border of pubes (tape)	$8\frac{1}{4}$ „
Ditto ditto callipers	7 „
Navel to base of ensiform cartilage	$9\frac{1}{2}$ „
Greatest abdominal girth	37 „
Height of navel above pubes (tape)	$6\frac{3}{4}$ „
Height of fundus (about 1 inch below tip of ensiform cartilage)	$6\frac{1}{2}$ „
Greatest girth round pelvis. (N.B.—Difficult to measure on account of pendulous belly)	$28\frac{1}{2}$ „
Spp. Il.	$8\frac{5}{8}$ „
Cr. Il.	9 „
Trochant.	10 „
Conj. ext.	$6\frac{3}{4}$ „
Left oblique (external)	8 „
Right oblique (external)	8 „
Conj. diag. cannot be measured.	
Right ant. sup. spine to rostrum of pubes	5 „
Left „ „	$5\frac{1}{2}$ „
(These measures are doubtful.)	
Right ant. sup. spine to right of post. sup. spine	$5\frac{3}{4}$ „
Left „ left „	$5\frac{3}{4}$ „
Between post. sup. spines	$3\frac{3}{8}$ „
Left post. sup. spine to 1st sacral spine	$1\frac{3}{4}$ „
Right „ „	$1\frac{3}{4}$ „
From upper border of 1st sacral spine to tip of coccyx (arc)	$4\frac{1}{4}$ „

From 2nd lumbar spine (the most prominent) to right ant. sup. spine	8¼ in.
Ditto to left ant. sup. spine . .	8 „
Ditto „ right post. sup. spine .	3½ „
Ditto „ left „ . .	3½ „
Antero-post. diam. of outlet	3¾ „
Between tubera ischii (measured with fingers side by side)	2¼ „

In view of the measurements, especially the internal measurement between the tubera ischii, it was decided to induce labour by the method of Kiwisch (vaginal douche), with carbolised water (1 in 80) at a temperature of 110° F., from an irrigator (such as is in use at the hospital) suspended so as to give a fall of about ten feet, for a quarter of an hour three times a day.

February 23rd, 8 p.m.—Douche for quarter of an hour.

24th, 8 a.m.—Douche repeated. During the process the uterus was felt to contract very firmly and the fœtal movements to be vigorous. No fœtal heart heard by house physician.

25th.—Douche has been repeated five times in all; during the last irrigation the uterine contractions were much stronger and fœtal movements vigorous, and after it the os externum was found dilated to the size of a florin. The head was distinctly felt with a suture running transversely. From the os externum to the head measured about 1½ inches. Cervix freely secreting. No fœtal heart heard by house physician.

26th, 4 a.m.—Sharp pains in back, running round abdomen.

6 a.m.—Strong pains every twenty minutes.

8 a.m.—Vaginal douche repeated. Movements of fœtus unusually vigorous (they were not felt by observers or by mother after this).

10 a.m.—Pains every ten minutes. Cervical canal about one inch long. Suture as before, no fontanelle

could be felt. Large bag of waters protruding during pains. No fœtal heart heard.

11 a.m.—Head well engaged in brim. Pains very strong, lasting five minutes and recurring with only one minute's interval. Portio vaginalis flattened, edges of os sharp, size equals half a crown.

11.55.—Membranes ruptured during examination, the os retreated at once beyond reach except in front; head well engaged in pelvis. Small fontanelle close to right tuber ischii, sagittal suture lying in left oblique diameter, large fontanelle out of reach (second vertex position with much flexion).

1 p.m.—Head had been down on the perineum for about an hour pressing strongly against sacrum and coccyx. Caput succedaneum almost hiding small fontanelle. Large fontanelle just within reach. In front the finger could be passed up easily between head and pubes as far as the neck, leaving an unusually large space behind the pubes. Bones of head rather soft, and at small fontanelle pressed into a cone.

2 p.m.—Temp. 98·2°, pulse 108, resp. 40. Some œdema of fourchette and posterior part of labia. Posterior part of perineum about anus and coccyx distended in an unusual way. Pains very strong.

3 p.m.—Pains almost incessant since 1 p.m. Patient in great distress.

Forceps applied, some difficulty in locking, the blades tending to separate towards the concave or anterior side. When locked, the left blade was slightly anterior to the right. The head passed out of the ligamentous pelvis in the second position, and did not become antero-posterior till "out of the bones," but in passing over the perineum it assumed this position. The head was born in three or four tractions, the handles being relaxed in the intervals. No difficulty with the shoulders. A tear an inch and a half long in the perineum and in the mucous membrane of the posterior vaginal wall was repaired with three silver sutures, the ends being fastened into a long coil. The

perineum about the tear was œdematous but did not appear bruised. Child stillborn.

Fœtal head.—The marks of the forceps are seen in a direction coinciding with the occipito-mental diameter (good flexion of head), the end of each blade lying on the cheeks and the anterior edge of each blade lying over the front of each ear. An incised wound over left frontal bone about half an inch long, running vertically above the external extremity of the eye, starting about an inch above it, reaching to the bone. No injury to the bone felt. There was a similar mark nearly over the occipital protuberance, a little to the left of the middle line, about half an inch long, reaching to the bone, which cannot be felt to be injured. Continuous with this, towards the left side of the neck, was an indentation apparently due to the forceps. Neither of the wounds corresponded with the eventual position of the forceps.

Shears.—The right half of the head is on a higher level vertically; right frontal bone anterior to left. Right frontal and parietal bones overlap the left. Frontal and occipital bones beneath parietals. Right parietal and frontal more convex than left.

Caput succedaneum on posterior part of left parietal and adjacent part of right parietal.

Wounds.—Distance between two wounds described above equals 3½ inches. But the scalp easily slides so that the distance is reduced to 2½ inches, which is the space between the tubera ischii.

Measurements.

Child: male.

Length 20 inches. Weight 5 lbs. 10 oz.

Head.

Biparietal 3½ in. (can be compressed to 3).

Bitemporal 3 in. (can be compressed to 2½).

Bimastoid 2½ in.

Fronto-occipital 4 in.

Suboccipito-bregmatic 3 in.

Mento-occipital 4¾ in.

Circumferences.

Fronto-occipital 13½ in.
Suboccipito-bregmatic 11½ in.
Length of sagittal suture 3½ in.

Course of lying-in.—Temperature on first day 98·6°, pulse 84, resp. 20.

Temperature rose on the second day to 102° F., pulse 100, resp. 24.

On third day to 103·4° F., pulse 100, resp. 24. Patient was now in a state thus described in the house physician's notes:

"She is now in a very queer state, refusing to speak, answer questions, or put out her tongue. She stares vacantly before her and does not flinch when her conjunctivæ are touched. Some twitching of right eyelids; left eyebrow occasionally drawn up."

On fourth day, temp. 100·4°, pulse 124, resp. 32. State same as yesterday, together with determined refusal to take food; struggling when fed; sleep during night much interrupted; more twitching of face; fidgetting with hands. General condition of perineum very good. Patient fed by soft catheter passed by nostril into pharynx.

On fifth day temp. 99·2°, pulse 112, resp. 32. Temperature sank probably after movement of bowels for first time since labour.

Yesterday evening fed herself and answered questions. This morning quite herself.

From this time all went well. Lochia were quite normal from the first; they ceased on the ninth day. The perineum healed completely.

On twelfth day a thorough examination was made.

Per speculum, vagina healthy.

Per vaginam, exactly opposite the posterior edge of each tuber ischii, about the insertion of the great sciatic ligament is a distinct cicatrix over which the mucous membrane is adherent to the bone. No deposit.

Intertuberous diameter again measured opposite the

cicatrices by three fingers thrust in side by side, and found to be rather less than two inches.

She was discharged quite well on the fourteenth day. On April 17th she was quite well and at work.

Analysis of Table (p. 188).

Total labours 32.
Total women 20.

Presentations.

Vertex	27
Face	1
Not recorded	4

Vertex cases.

Right occipito-iliac	12
Left occipito-iliac	3
Third position	3
Fourth position	1
Not recorded	12

Changes during labour.

Deep transverse position of head (N.B. with Schmeidler's = 7)	6
Marked antero-posterior position of head	1
Posterior rotation	2
Spontaneous versions	2
Spontaneous premature labours	3
Expansion of pubic arch (proved)	3
Expansion of pubic arch (supposed)	1

Cases in which interischiadic diameter was less than bitemporal or biparietal . . 6

	Greatest.	Difference.	Least.
Hüter	6·5 c.m.	5	c.m.
Breslau	2 „	1·25	„
Moor (second labour)	3 „	2·25	„
Stadfeldt	2 „		

	Difference. Greatest.		Least.
Hoening . .	4·5 ,,	...	3·75 ,,
Champneys (third labour)	3·5 ,,	...	2 ,,

N.B.—Cases only included in which the head passed undestroyed.

Moulding of fœtal skull noted in 9 cases.

Greatest apparent pressure on posterior side of head.	4
Greatest apparent pressure on anterior side of head.	2
Other conditions	3

Operative procedures.

Cæsarian section	2
Craniotomy	6
Induction of premature labour . . .	4
Forceps	12
Forceps alone	9
Forceps after induction of premature labour	3

Results to children.

Death to child in 13 out of 32 labours = 40·6 per cent.

Results to mothers.

Death to mother in 9 out of 32 labours = 28·1 per cent.

45 per cent. of mothers died.

Result not recorded 1.

Before discussing the question as a whole, it will be well to briefly mention the opinions of some of those who have written on the subject.

Moor (S. 67) says that the head of the child will not take a tranvesrse position at its entrance into the pelvis, or will soon leave it and adapt itself to the upper and middle part of the pelvic canal in the direction of the elongated conjugate. In this position, vertex, face or breech will be able to descend without difficulty nearly to the outlet. (S. 68) As a further favourable condition for

labour may be mentioned the great mobility of the sacro-iliac and pubic symphyses. Without this mobility neither the spontaneous birth of a full-time child nor its extraction by the forceps would ever have been possible. Even a premature head cannot be seized nor extracted by forceps or cephalotribe on the dried pelvis. Nutation of the sacrum round its transverse axis is mentioned.

(S. 69) The difficulties are concentrated at the outlet. The pubic arch is too narrow for the occiput or forehead, it is best adapted to the chin.

(S. 73) A large fœtal part (*e.g.* the head) can descend in a sagittal direction as far as the pelvic floor, where difficulty begins; the labour may end spontaneously through the mobility of the joints. This cannot, however, be relied on. Premature labour may profitably be induced. At full time the head should be allowed to descend to the pelvic floor. Forceps, perforation, Cæsarian section may be necessary.

Hugenberger (S. 32) says that the child generally presents with its back backwards, and that this is probably due to the encroachment on the abdominal cavity by the compensating lordosis producing pendulous belly, the fœtus lying more comfortably under these circumstances with its back backwards. The first difficulty arises low down in the pelvis, and in severe cases the rotation of the head will be impeded. At the outlet the larger parts (forehead and occiput) will not be able to pass. The chin adapts itself best to the pubic arch (conf. Moor's third labour).

With regard to operative procedures (S. 34) these must vary. In the higher degrees of contraction the induction of premature labour is especially indicated. At full time the arrest of a large fœtal part must be watched for and forceps attempted, or perforation or cephalotripsy performed. In view of Moor's labour No. 2, turning may be performed, the head having been laterally compressed more easily than if it had come first. Cæsarian section is probably never indicated.

Hoening says (S. 52) that the prognosis depends on the position of the kyphosis, the lower this is, the worse is the prognosis. The head (S. 53) engages the brim more or less transverse, in accordance with its position in the uterus. The further progress of labour will be influenced by mechanical conditions according to which (Spiegelberg) the head will accommodate itself to the shape of the pelvis and will sooner or later become antero-posterior. "In all cases of vertex presentations in this kind of pelvis it is remarked that the head stood in an oblique diameter." (Afterwards becoming nearly or quite antero-posterior.)

"Although the passage of the head through the narrow place must be considered a necessary condition for delivery," Hugenberger has pointed out another modification of vertex presentations (in these cases), viz. the back pointing backwards, explaining it by the encroachment of the compensating lordosis. His explanation is not quite obvious, it is not evident that the fœtal movements are more confined when its back is forwards than when it is backwards. Moreover Hugenberger's cases include one of face presentation in which delivery would naturally have been impossible with the chin backwards (back forwards); in this case it is not mentioned to which side the chin originally pointed. Hugenberger's explanation loses much force when it is noted that the small fontanelle pointed backwards only once in *left occipito-iliac positions* (unusual direction), whereas it twice pointed forwards in *right occipito-iliac positions* (unusual direction). On the other hand the "3rd" position is generally as common as or commoner than the "2nd." Hoening's explanation is that when the occiput is originally posterior, its forward rotation is prevented, and that the occiput at the outlet may even become posterior.

The shoulders often pass in the same oblique diameter as the head (Hoening's case, Birnbaum's first case, and a third case in the Bonn Hospital).

As to treatment (S. 55) all depends on the degree of contraction. The looseness of the pelvic joints must be

remembered. It is quite reasonable to induce premature labour in cases in which, if rickety, Cæsarian section would be absolutely indicated.

The proposal of Hugenberger to turn is not good. First, the head descends low so soon that turning would be contraindicated; secondly, the delay of the aftercoming head tells the same way, especially as it occurs low down, when the placenta is probably useless. Besides, to turn is to give up the advantage which the slow expansion of the pelvic outlet affords to the persistent pressure of the head.

Turning is not then to be recommended; we cannot produce face presentations at will, and are left with Cæsarian section, perforation, and forceps.

In spite of Hugenberger's opinion, Cæsarian section is sometimes indicated; impaction of the head would so far contraindicate it.

For forceps this pelvis is particularly adapted, on account of (1) the mobility of the joints; (2) the action of the forceps as a wedge; (3) the remoteness of the bladder and peritoneum from the points of injury; (4) the position of the blades on the child's head laterally, in the diameter to be compressed.

Conclusions (Hoening):

1. Turning is not to be done when the head presents.

2. Cæsarian section is indicated when the transverse diameter of the outlet is less than 5 c.m. and the head is moveable, so as to be easily extracted from above.

3. If an operation is required and the transverse diameter of the outlet exceeds 5—6 c.m., the forceps is indicated; even if it is less than 5 c.m. it may be tried with caution if the head is impacted, but if traction is unavailing perforation must follow.

Schroeder ('Geburtshülfe,' 4te Auflage, 1874, S. 554) agrees practically with the above conclusions. He does not mention turning. He says that induction of premature labour is indicated in the majority of cases. Cæsarian section is quite exceptionally necessary. He mentions thirty-six labours in eighteen women (to which

he does not give references). Premature labour was induced eight times and completed by forceps four times. Spontaneous premature labour occurred once and was ended by a severe forceps operation. Mature children were born naturally four times; forceps was used ten times, in two of these cases perforation was necessary; perforation was also performed in nine other cases. One woman died undelivered. Cæsarian section was performed twice, once with success. Of twenty-three vertex presentations the occiput was backwards in six cases (it is not stated on which side). Twenty-three children died during or in consequence of labour, only thirteen (including two Cæsarian sections) survived. Twenty-eight labours ended in recovery of the mother, eight mothers died. Thus, eight out of eighteen mothers or—

44·4 per cent. of mothers died.

22·2 per cent. of labours were fatal to the mother.

63·8 per cent. of the children died before or soon after birth.

Schroeder remarks that these statistics are probably too high, as only the severe cases are generally recorded.

Spiegelberg ('Lehrbuch,' 1878, S. 485) says that little reliance must be placed on the mobility of the pelvic joints, Cæsarian section is seldom indicated. The child's back is often backwards, "doubtless" in consequence of the pendulous belly (Hugenberger's explanation). He recommends leaving the labour alone and using the forceps, or if necessary the perforator. Turning is only indicated in abnormal presentations, or where immediate perforation seems more difficult and dangerous than that of the aftercoming head. In the generality of cases the induction of premature labour is justifiable.

General Remarks.

Presentations.—It will be seen that the vertex commonly presents. This would be naturally expected from the ease with which the head can engage the pelvis.

The right occipito-iliac position is much commoner than

the left. The cause of this needs explanation. The head is usually more or less transverse (Moor says the reverse).

Changes during labour.—The occiput rarely turns forwards, deep transverse position is common, and posterior rotation not uncommon.

In commenting on this we cannot accept Hugenberger's explanation, even though endorsed by Spiegelberg, and think Hoening's far better. The fact is that the head meets with great resistance from the front part of the pelvis, which prevents its rotation and may even produce posterior rotation, and this explanation tallies with the great frequency of right occipito-iliac presentations, in which the occiput is frequently posterior. Marked antero-posterior position of the head, which, according to some authors, ought to occur frequently, is far from common. It is probable that the expansion of the pubic arch, though proved in some cases, has been made answerable for too much, and this is made more probable by the six cases (see Table, p. 180) in which the head apparently passed undiminished through a space less than itself.

The key to the explanation will be found in our own case, in which the head passed out of the ligamentous pelvis *completely posterior to the tubera ischii* which apparently left their marks on it, being themselves injured in their turn. In such cases the head acts as it does in some cases of oblique contraction, it entirely neglects the useless part of the pelvis (this implies what is called in the obliquely contracted pelvis the "extramedian position"). It therefore adapts itself to the space behind the tubera ischii in front, and in front of the sacrum and coccyx behind, and there is little doubt that this space is capable of considerable expansion by the "nutation of the sacrum."

It is far from unlikely that in some of the cases in which an eventual antero-posterior position of the head is mentioned, this was not its position when it emerged from the ligamentous pelvis, but was assumed by it during its passage over the perineum (as in our case), and that in many, if not in most cases, it emerges from the ligamen-

tous pelvis transverse or oblique (as it did in our case), in which position it finds most room. After the passage of the head "out of the bones" space may be gained by the neck passing between the pubic rami.

If this is the case the inter-ischiadic diameter is no accurate criterion of the possibility of delivery, except as implying a degree of other deformity. Nor is the antero-posterior diameter of the outlet. The measure we really want (but which can hardly be obtained) is the space between the tubera ischii in front (*i.e.* from a line joining them) to the tip of the sacrum (or the coccyx) behind, enlarged by the nutation of the sacrum. Of such a space the transverse diameter, as bounded by no bone (except to a small extent by the ischial spines), would probably be the greatest dimension, and therefore the best suited for the long diameter of the head. The inter-ischiadic diameter in the living woman should always be measured by the fingers side by side, and not by callipers. Its expansibility cannot be practically measured before labour, but should be remembered. Spontaneous premature labour is not uncommon; the cause of this is not known, but it may be remarked that premature labour seems in these cases to be easily induced—a very fortunate circumstance, since there is great variety in this respect.

The moulding of the fœtal skull gives no constant results, the shears are often considerable, but the data are insufficient. The fact is that the head meets with much resistance from the (practical) front as well as from the back wall of canal; it never, however (as implied by Birnbaum and Hugenberger), comes in contact with the symphysis pubis, on account of the narrowness of the pubic arch.

Prognosis.—This pelvis has in general treatises been made too unimportant, while it is probable that our accurate data are from severe cases. Still an immediate fœtal mortality of 40·6 per cent. and a maternal mortality of 28·1 per cent. make it sufficiently serious, in spite of the position of probable injuries low down and far away from*

* Continued on p. 192.

Author.	Reference.	Presentation.	Change during labour.	Fœtal skull.	
				Bipar.	Bitemp.
Lange	'Arch. f. Gyn.,' Band i, S. 224	3rd vertex	None recorded	Not given	
Jenny	'Würz. Med. Zeit.,' vi, S. 335	Head	„	„	
Kleinwächter	'Arch. f. Gyn.,' Band i, S. 156	1st vertex		Perforation	
Braun	Ibidem, Band iii, S. 154	Right occipito-iliac	„	„	
Schmeidler	'Mon. f. Geb.,' Band xxxi, Heft i, S. 31	3rd vertex	No rotation.	„	
Hüter	'Zeits. f. Geb. u Gyn.,' Band v, S. 22	2nd vertex	Child born in 2nd vertex position (tumour in hollow of sacrum, shape and size of a kidney).	8 cm.	6·5 cm.
Herbiniaux	'Traité sur divers accouchemens laborieux,' tome i, p. 271, Bruxelles, MDCCLXXXII	Right occipito-iliac	Separation of pubic bones with a loud noise.	No measures	
Chiari	Chiari, Braun, and Spaeth, 'Klinik. der Geb. Erlangen,' 1855, S. 647	Not recorded	Deep transverse position.	„	
Breslau	'Mon. f. Geb.,' Band xv, Heft v, 1860, S. 373	Head; no details	No details.	7·5 cm.	6·75 cm.
Idem.	Ibidem, ibidem	Head	Spontaneous version; expansion of pubic arch		
Birnbaum	Ibidem, Band xv, 1860, S. 102	Right occipito-iliac	Deep transverse position; posterior rotation under forceps; shoulder passing in same oblique diameter as head	No measures	
Idem.	Ibidem, Band xvi, 1860, S. 67	Left occipito-iliac	Much flexion of head.		
Idem.	Ibidem, Band xxi, 1868, S. 353	Right occipito-iliac	Deep transverse position; head continually pressing against sacrum.	„	
Moor	'Das in Zürich befindliche kyphotisch querverengte Becken,' Zürich, 1865	Head	Not noted.	7·5 cm. (2nd labour)	6·75 cm.
Idem.	Ibidem	Head	Spontaneous version; back backwards; expansion of pubic arch.		
Idem.	Ibidem	Face (chin forwards)	Not noted.		
Idem.	Ibidem	Right occipito-iliac	(Rupture of uterus).		

Pelvic outlet.		Operative measures.	Moulding of fœtal skull.	Result	
Ant.-post.	Inter-isch.			to child.	to mother.
Not given	3·8 cm.	Cæsarian section	(Cæsarian section)	Alive	Death.
7 cm.	9 cm.	„	„	„	„
Not given	6·5 cm.	Cephalotripsy	(Cephalotripsy)	Death	Recovery.
„	8 cm.	Craniotomy	(Craniotomy)	„	„
To sacrum 10 cm. To coccyx 8 cm.	5 cm.	„	„	„	„
2 or 2·5 cm.	1·5 cm.	Premature labour induced, no other aid	Not specially noted	Alive (soon died)	„
No measures		None	Not noted	Alive	„
8 cm. (3″)		Natural labour	„	„	„
Not given	5·5 cm.	Easy forceps	„	„	„
		Premature labour induced	(Footling)	Stillborn	„
No measures		Forceps	Flattening and injury of posterior side of head, protuberance of anterior side	„	„
		„	Indentation of anterior, protuberance of posterior side	„	„ (?)
„		„	Fracture of skull	„	Death.
(To sacrum) 12·3 cm.	4·6 cm.	„	Not noted	Living	Recovery.
		Induction of premature labour	Bilateral compression, no fissures	Stillborn	„
		None	Not noted	Living	„
		„	Decomposed	Stillborn	Death in 4th labour.

Author.	Reference.	Presentation.	Change during labour.	Fœtal skull.	
				Biper.	Bitemp.
Hugenberger	'Ein kyphotisch-querverenckte Becken,' St. Petersburg, 1868	3rd vertex	Flexion; deep transverse position.	8 cm.	6·7 cm.
Idem.	Ibidem	4th vertex	Became transverse under forceps, with increased flexion; shoulders in opposite oblique diameter with difficulty.	11 cm.	7 cm.
Stadtfeldt	'Med.-Chir. Rev.,' No. lxxv, Jan., 1869, p. 24 (3 labours)	(2 previous craniotomies)	None recorded.	No measures	
Idem.	Ibidem, July, 1871, p. 275	Head	Implied expansion of pubic arch.	8·5 cm.	Not noted
Hoening	'Beitr. sur Lehre vom Kyphotisch-verengten Becken,' Bonn, 1870	2nd vertex	Sagittal suture more antero-posterior than oblique; passed narrowest place quite antero-posterior; posterior rotation followed; shoulders in same oblique diameter as head.	9 cm.	8·25 cm.
Chantreuil	'Gaz. Hebd.,' 2me série, tome vii, 1870, p. 530	Head (?)	Labour quick and easy.	8 cm.	Not given
Idem.	Ibidem	Head	Labour premature, quick and easy; sagittal suture nearly antero-posterior.	8·5 cm.	„
Kesmarszky	'Wien. Med. Woch.,' 1872, No. 2, S. 33	Right occipito-iliac	...	No measures	
Champneys	In this paper	Head	Spontaneous premature labour; easy forceps delivery.		
Idem.	„	Not recorded	Spontaneous premature labour of twins.		
Idem.	„	Right occipito-iliac	Premature labour induced; deep transverse position; head passed out of ligamentous pelvis in left oblique diameter; much flexion early in labour; much pressure of head against sacrum and coccyx.	9 cm.	7·5 cm.

Pelvic outlet.		Operative measures.	Moulding of fœtal skull.	Result	
Ant.-post.	Inter-isch.			to child.	to mother.
(To sacrum 11·7 cm.)	8·5 cm.	(2 previous labours spontaneously)	Marks on posterior-lying forehead	(2 previous alive) Alive	(2 previous recoveries). Recovery.
		Forceps	Flattened in oblique diameter	„	Death.
To sacrum 9·5 cm. To coccyx 7·5 cm.	7·5 cm.	(2 previous craniotomies) Craniotomy	(Craniotomy)	(2 previous stillborn) Stillborn	(2 previous recoveries). Death
Not recorded	6·5 cm.	Not recorded	Not recorded	Alive	Not recorded
(To sacrum) 9·5 c.m.	4·5 cm.	Forceps	Anterior parietal overlapped posterior	Alive (soon died)	Death.
(To sacrum) 9·5 cm. (To coccyx) 5 cm.	9 cm.	None (premature, spontaneous)	Not recorded	Alive (?)	„
Not given	10 cm.	Forceps (premature spontaneous labour	„	Alive	„
No measures		Forceps	Protuberance of anterior parietal	„	Recovery.
9·5 cm.	5·5 cm.	„ spontaneous premature labour	Not recorded	„	„
		Spontaneous premature labour	„	„	„
		Induction of premature labour, forceps	Posterior parietal overlaps anterior; posterior side of head more convex, anterior side flattened	Stillborn	„

bladder and peritoneum. Experience has not borne out Levret's axiom.

Treatment and conclusions.—Our opinions agree generally with those of Hoening.

1. In a first labour, if the head presents, wait and act according to circumstances. This implies forceps, craniotomy, or Cæsarian section, which should always be considered in the above order.

2. If the head presents never turn.

3. In subsequent labours, where the history of the first labour seems to indicate it, premature labour may be induced with good hope.

4. No known measurements give us any sure indication for forceps, turning, Cæsarian section, or the date of the induction of premature labour.

5. The mobility of the pelvic joints implies a prognosis always more favourable than measurements would lead us to suppose.

6. It is probable that in many cases the head entirely neglects the anterior half of the pelvic outlet, and emerges from it transverse or at most oblique. Antero-posterior emergence is the exception.

7. Each succeeding difficult labour increases the liability of the uterus to rupture, as in other forms of pelvic distortion.

The PRESIDENT expressed the thanks which all present must feel were due to Dr. Champneys for his interesting and valuable paper.

Dr. GALABIN thought that it was worthy of note that in the cases recorded by Dr. Champneys the position of the long diameter of the head did not correspond to the largest diameter of the pelvis, but was more transverse than usual, instead of being more nearly antero-posterior. It was generally considered that one of the reasons why the long diameter of the head usually occupied the oblique diameter of the pelvis on entering the brim was that this is the largest, or one of the largest, diameters of the pelvis clothed with soft parts. It was also generally held, and he thought correctly, that to find the sagittal suture running more antero-posteriorly than usual when the head was at the brim was an indication of transverse contraction of the

pelvis; and to find it persistently remaining in the transverse diameter of the pelvis a sign of contraction of the conjugate diameter. He asked Dr. Champneys how he explained it that in these cases the head did not adapt itself at all to the shape of the pelvic brim?

Dr. ROPER remarked on a point of great interest in Dr. Champneys' case, viz. the mechanism of delivery, the fœtus not passing under the pubic arch, but behind the tuberosities of the ischia. This resembles the mechanism of delivery in the lower animals; for in these there is no pubic arch. The fœtus always passes behind or rather above the tuberosities of the ischia. In the pelvis described by Dr. Champneys delivery is not so difficult as might be expected, because the axis of the outlet corresponds with that of the brim. There is no curve of Carus to be traversed as when the fœtus has to pass under the pubic arch. In all cases of antero-posterior curvature of the spine, the lower ribs approach the crests of the ilia, and consequently the capacity of the abdominal cavity is greatly diminished in a vertical direction. The uterus in its development cannot sufficiently grow in an upward direction; it is forcibly thrust forwards, and the anterior abdominal wall becomes so stretched as to give rise to an extreme form of pendulous belly—so much so that the uterus seems to be contained in a hernial sac. This extreme anterior obliquity causes a difficulty to the entrance of the fœtal presentation into the pelvic brim, which without intelligent observation may be supposed to be caused by contraction of the brim. He had seen a case of this kind in which a patient had been in three previous labours delivered by craniotomy. In her fourth labour she became a patient of the Royal Maternity Charity. In the absence of Dr. Roper Dr. Herman attended her in labour at full term, and easily delivered her, with forceps, of a living child. The day following she was in extreme suffering, with a quick pulse and high temperature. On removing the bandage to examine the abdomen the uterus was hanging down in the abdominal pouch, and her sufferings were caused by the uterus having been bandaged to the anterior surface of the symphysis pubis. In Dr. Roper's experience he had found that contractions of the outlet of the pelvis formed greater obstacles to the safe delivery of children than did corresponding degrees of contraction of the pelvic brim.

Dr. HERMAN said that, so far as he remembered the case to which Dr. Roper had alluded, there was no great difficulty in the passage of the head through the pelvis. He thought with Dr. Champneys that many cases had been published on account of their difficulty, and that from the literature of the subject it would be thought that delivery in the kyphotic pelvis was more often attended with difficulty than it really was.

Dr. CHAMPNEYS said that his opportunity of observing a good case had excited his interest in the subject, and had convinced him that many of the current ideas were erroneous; indeed they bore the appearance of evolution at the fire-side rather than of observations at the bed-side, and his study of the thirty or more cases which he had collected bore this out. In answer to Dr. Galabin, with reference to the transverse portion of the head at the brim, he did not quite agree with his statement; it appeared to him that the position of the head at the end of pregnancy was determined by the adaptation of the whole ovum in the fœtal attitude to the uterine cavity, which was wider from horn to horn than from before backwards. In accordance with this, and remembering the dextral obliquity and dextral torsion of the uterus, the back (*i.e.* the occiput) at this time most commonly pointed to the left and a little in front (first position of Naegele), or to the right and a little behind (second position of Naegele). When labour began, a new set of conditions arose, namely, the adaptation of the head to the brim, but no alteration of position would take place unless the head more or less fitted the brim. Now in most kyphotic pelves (which but for their deformity were good pelves enough, and not usually dwarfed like rickety pelves), although the conjugate was larger than the transverse diameter of the brim, there was plenty of room for the long diameter of the head in the (lesser) transverse diameter of the brim, and there was therefore no force to change its position. The clinical facts tallied with this. The resemblances between this pelvis and that of the quadrupeds make the points in veterinary obstetrics mentioned by Dr. Roper of interest. (To the President.) It seemed to him (Dr Champneys) that pendulous belly was produced by any deformity shortening the abdominal cavity, apart from the question of encroachment by the vertebræ, and was seen in kyphosis, lordosis, and scoliosis, the uterus growing in the only direction free to it.

A NOTE ON UTERINE MYOMA, ITS PATHOLOGY AND TREATMENT.

By LAWSON TAIT, F.R.C.S.

I DO not know anything which has done more to confuse our pathology than the frequent alteration of pathological nomenclature and the adoption of classical words for its use without the slightest reference to their real meaning. Thus the tumours which in our youthful days

were classified under various meaningless but perfectly understood and well associated terms are now grouped as *sarcomata* of various kinds, though it is perfectly certain that many of them have few features in common. Why the word σαρξ should be introduced as it has been in pathology I cannot in the least understand, since it is perfectly clear that the Greeks meant by it only what is vulgarly included in the word "flesh," by this the skin being particularly indicated. The constant prefix of the adjective λευκὸς (Λευκὴν ἐδαπτον σαρκα τῆς δυδαίμονος) shows this and also proves that we have no right whatever to have coined such a word as *sarcoma*, which, if it can mean anything at all, can only mean a swelling of the skin. The terms "fibroma" and "fibroid" are convenient but as barbarous to the classic ear as well can be, but I imagine that it is of little use objecting to them now. Still, as we have a clear notion as to what a fibre is, and as we restrict the term fibrous to a particular kind of tissue of which muscles are constructed only to a very limited extent, it is perfectly certain that we should not designate purely muscular tumours as "fibroid." The Greeks used the word μυὼν to mean what we now call muscles (Δρυψ' απο μυώνων, απο δ' οστεον αχρις αραξε); any tumour consisting of muscular tissue should be called a "myoma."

The very common disease of the uterus which is to be found accurately described by some of the earliest surgical writers should therefore be called "uterine myoma" and not "fibroid tumour of the uterus." I daresay there may be such a thing as a uterine fibroma, but I have never seen one; nor do I think that the facts of its history, the nature of its pathology, nor the requirements of its treatment can be such as I am about to advance.

For clinical purposes the most convenient division of uterine myoma is into the classes of the single tumour and the multiple. Great prominence has hitherto been given to another and triple subdivision, submucous, intramural, and subperitoneal, but I think the prominence has been unduly insisted upon. It is based entirely on the acci-

dent of the point of origin of the tumour or its constituent parts and the direction in which they travel in the progress of their growth, and save in one point of their treatment it has little or no importance. The growth of ordinary uterine myoma is absolutely limited to the period of life marked by sexual activity, for no one has recorded the disease as having been observed before puberty, and we know that it never originates after the menopause, and that the latter event marks the arrest of its growth when it has previously appeared. Many of the other features which uniformly characterise its presence and progress (and of which I shall speak at length bye and bye) enforce the conclusion that it is a disease associated with the menstrual function, originating directly in the vascular mechanism, associated with or governing menstruation, and in all probability its primary cause is to be found in the nervous body which certainly governs this singular function. The statements which I see in books that the production of uterine myoma is favoured by celibacy, by marriage, by non-indulgence in the sexual passion and by over-indulgence in the same, I dismiss because they are contradictory, and because I have seen nothing in my own practice to support any of them.

I look to some derangement in the menstrual mechanism for the production of the disease, and the success of a particular method of its cure has, I think, established the correctness of the direction of my search, though I do not believe I have yet discovered the ultimate cause.

First of all let me state my conclusions concerning this function. Despite the numerous contributions of Kesteven Jackson and others in support of the view that the function of ovulation and menstruation are quite independent of one another, the contrary seems to be quite accepted, and from the language of the current text books it would almost appear as if it had never been disputed. I become more and more satisfied that in this the books are quite wrong, and that menstruation and ovulation, though they have an apparent community of purpose and perhaps may

have a community of mechanism, they are wholly independent of one another in time and everything else. Certain it is that menstruation is not dependent on ovulation, for it goes on after complete removal of both ovaries if the Fallopian tubes are uninjured. It stops when the tubes are removed even if the ovaries are both left, though in exceptional cases it continues even then. The conclusion indicated by my operations certainly is that if there is a centre upon which menstruation depends it exists in or in connection with the Fallopian tubes.

If, therefore, there be an immediate cause for uterine myoma we shall probably find it in the nervous mechanism of the Fallopian tubes, and this has yet to be investigated.

Instead of the existing and triple subdivisions of uterine myomatous growths I propose another for pathological purposes of two varieties, because the positions, the methods of growth, and the clinical histories of the two are perfectly distinct and so, very often, is the treatment.

By far the more common variety is what I call the nodular myoma, whilst the other is quite unusual if indeed it is not rare. I propose for it the name of "concentric myoma" and I shall deal with it first.

The form of the concentric myoma is perfectly smooth and ovoid. It consists of a uniform hypertrophy of the muscular tissue of the uterus in the midst of which the uterine canal lies centrally or nearly so. If the tumour be cut through it will be found to be perfectly uniform and free from any nodular arrangement. Its tissue is loose and usually very œdematous, so that when cut into the serum drains away from it and the tumour shrinks greatly in size. If a perfectly fresh section be cut by the freezing process, and properly strained, the tissue will be found to consist of a mass of fusiform cells having the characteristic rod-shaped nuclei. The intercellular spaces are well marked, this being a very distinct contrast to the arrangement of the structures in a nodular myoma. I cannot make out any definite arrangement of the cells of this form, nor have I seen any indication that it has a

specific method of growth other than a general increase at all points of the normal muscular tissue of the central layers of the uterus.

The œdema of this variety is a very remarkable feature and presents a great difficulty in its surgical treatment. Immediately under the peritoneum and immediately outside the mucous coats are denser layers of muscular tissue, varying in thickness in different specimens; but between these the whole mass consists of muscular trabeculæ, the interspaces filled with fluid being often large enough to be visible to the naked eye. The length and diameter of the uterine canal seems to be increased proportionately to the general dimensions of the diseased organ, but its relations and diameter are only similarly altered in this respect, there being a very striking contrast again to the conditions of nodular myoma.

Of the nodular myoma I propose two sub-varieties, the simple and the multinodular, because they have very marked clinical differences.

The appearance of a nodular myoma is so very well known that it hardly needs description, yet some of its essential features seem to me to have been so completely missed that I must speak of them somewhat in detail. In the simple form it is most commonly seen in the ordinary polypoid myoma that I may take that as the usual type.

Turning over the notes of cases made years ago, when I had time to examine fully all the tumours which came under my notice, I find records of eleven simple nodular myomata removed as polypi, and of these observations the following conclusions form an abstract. They had all narrow pedicles formed of true uterine tissue and lined externally with a tube of the normal mucous membrane of the uterus. Over the surface of the tumour the mucous layer could be discerned in patches in all but two, and in one it formed a uniform covering, in this case the tumour being very small. Underneath the mucous membrane layer, or the remains of that layer, was a capsule con-

tinuous with the true uterine tissue of the pedicle in which the elements of the uterine tissue were discernible. This capsule was in every case separable from the tissue of the nodule in the neighbourhood of the pedicle and sometimes for a considerable distance from it, so that there could be no doubt whatever that the original site of the nodule was underneath the mucous coat and also underneath a layer of greater or less thickness of true uterine tissue.

In the pedicle there was always one large arterial trunk; in one or two instances there were in addition two or three smaller vessels ,but it is so clearly noted in one observation that the smaller vessels were branches of tho larger that I conclude that it is so in all. A few days ago I removed a small polypus by a snip of the scissors, and I happened to cut the artery just where it branched, so that I am confirmed in my conclusion. The branches supply the capsule, whilst into the nodule itself the artery enters without division.

In four of my specimens I was able to make a complete injection with Seitel's blue, dissolved in size and made colourless by Liquor Potassæ. When the mass was hardened in chromic acid, the capsule assumed an intense blue whilst the nodule was only streaked here and there. This completely substantiates the fact declared long ago by clinical experience that uterine myoma has a very faint vitality, and it explains this feature by demonstrating the scant supply of blood.

The dissection of the nodules injected was a very tedious and difficult process, and perhaps was not very satisfactorily done, but the general results were tolerably uniform.

The main facts were that the one artery which entered the nodule seemed rapidly to lose anything like a distinct muscular wall, that it ran centrally, seemed to have extremely few branches and near the middle of the tumour it became lost in an extraordinary way. By microscopic section of the injected nodule I never could establish anything like a capillary system, and could see nothing but an occasional wall-

less canal dilated into irregular ampullæ, and such canals probably represented the original capillaries which returned the blood to the efferent vein. So scattered were the vessels of this kind that it was quite impossible to arrive at any conclusions regarding their continuity. From the fact of the vascular poverty of these nodules, it is certain that the hæmorrhage, which is their chief symptom, does not come from them, but from the thickened uterine walls.

I cannot find any note of my having looked for nerves in these nodules, certainly there is no reference to my having found any.

The examination of the tissue of the nodules was conducted in a great variety of ways, and in some of the conclusions there are apparent contradictions, but these are not upon points of importance. The one uniform conclusion is that the entire bulk of the tumours consisted of fusiform muscle-cells, and I doubt very much if there was any real fibrous stroma observed at all, though in two of the earlier observations it is noted. This mistake, as I believe it to be, was probably due to my inexperience. In the later notes it is recorded positively that there was a complete absence of any true fibrous tissue, and that the appearance of it was due to the section of certain cells being such as to deprive them of that part containing the characteristic nuclei, leaving only an attenuated extremity. This fallacy was exposed by the double-staining process of carmine and hæmatoxylin, or where the hæmatoxylin stain was reduced by nitric acid. The same methods, assisted by the accidents of sections showed clearly that there was a very definite method in the arrangements of the fibres into bands, for groups of nuclei were shown in transverse lines indicating that a band had been cut across, and they were also seen in horizontal planes in some favorable instances to be arranged on a definite plan, the bundles being always curved with their concavities towards the centre of the nodule. In fact it seemed to me that the arrangement of a myomatous nodule round its central artery is very much

like that of a wasp's nest round a twig of a gooseberry bush, or rather, like the arrangement in a cross-wound spool of cotton round the central bobbin. This conclusion was amply confirmed by a special examination I made of a few subperitoneal buds growing on a large multinodular myoma which I was fortunate enough to succeed in injecting perfectly. In the small buds the growth was recent and therefore the details were more clearly made out.

Of one conclusion I am certain, that these growths are endogenous. The arrangements of the cells and their details were always more clear and definite the nearer the centre of the nodule. The further away from the centre, the more compressed and attenuated, the more fibre-like became the cells and the more indistinct their nuclei. This conclusion is maintained by the fact that if a nodule is found to have undergone calcification it is always at the circumference that the change is visible, and that any injury of the periphery of a myoma involves its death with great certainty. These facts can be understood only on the supposition that the vitality of a nodule is weakest at its periphery, and this is explained by the statement I have already made, and corroborated by all my observations, that blood-vessels do not enter the nodule from its capsule save at a very limited number of points, I think generally at one only.

The connective tissue between the nodule and its matrix can hardly be said to be vascular, and what nutriment it conveys to the nodule must be limited to a supply by its "Saftkanälchen," and perhaps some by mere transfusion.

From these conclusions it may be seen, therefore, that my view of the method of production of a myomatous nodule is that it proceeds from within outwards by reason of a growth of cell-elements near to the vascular supply, and that the deranged production of muscle-cells is due to, or dependent upon, some error of the nerve influence which governs menstruation.

This is clearly proved by the fact of which I have already published abundant evidence, that the progress of

a nodular myoma may be entirely checked by the arrest of menstruation. This is to be accomplished by the removal of the uterine appendages, chiefly the Fallopian tubes. Not only in this way may the growth of the tumour be arrested, and the hæmorrhage, which is a chief symptom, controlled, but if the patient be under forty-five years of age, the tumour will shrink in size, and may even disappear entirely. I have seen many instances in which tumours have entirely disappeared after removal of the appendages within a few months, tumours which must have weighed many pounds at the time of the operation. Certain it is that removal of the ovaries alone has little, if any, influence in bringing about this result, whilst removal of the tubes does. I have in several cases deliberately left the ovaries because they could be removed only by the application of a second pair of ligatures, and the results have been quite as satisfactory as those in which the ovaries have also been removed. Nearly two years ago I operated on a patient (sent by Dr. Cuthbertson, of Droitwich) who had a very large multinodular myoma, probably it would have weighed fifteen pounds if it had been removed. I removed the tubes only, as the ovaries were awkwardly placed, and I really stripped the tubes off the tumour and tied them at their uterine insertion, so that there was no question of tying the uterine arteries. The patient was forty-three years of age at the time of the operation, has never lost a drop of blood from the uterus since, and when I examined her last, April 5th, 1883, she was in perfect health, and not a trace of the tumour was to be felt. This is an instance which I could multiply, but as I have already published several I do not think it necessary.

But there are cases in which complete removal of the appendages does not arrest menstruation and I have under observation a case in which I removed the greater part of the fundus uteri as well, yet menstruation has continued for more than a year through the vagina and from the stump. Here, then, as everywhere else in the

domain of our art, we can lay down no hard and fast lines outside of which exceptions do not occur.

So far as I have gone, I can find no exception to the rule, which is almost universally accepted, that the nodular myoma ceases to grow at the arrest of menstruation. But I find there is a very common error as to the time of the arrest of menstruation in women who suffer from uterine myoma. The general impression is that the climacteric is completed with them, as with others, between the ages of forty-nine and fifty. But I have had abundant evidence that the presence of a uterine myoma may and often does delay the climacteric indefinitely. When we see a patient suffering from severe hæmorrhage from a myoma at the age of forty-seven, we have been accustomed to tell her to wait a few months and everything would be well. But I have watched them for years after that with regularly recurring menorrhagia, with singular fluctuations in the size of the tumour, and protracted hopes of recovery deferred till our hearts were sick. So that, amongst many other changes of opinion which have been effected by the advance of gynecology during the last five or six years, there must stand this, that the climacteric is sometimes delayed by the presence of a myoma for a long time after the usual period of the menopause, and that surgical interference on this account may be necessary after fifty. I need not say that it must be undertaken only after such experience in each case as will justify the surgeon in saying that all other means have failed to benefit the patient.

My experience in dealing with uterine myoma by removal of the appendages since 1878 amounts to fifty-four cases with three deaths, or a mortality of 5·5 per cent. This of course puts any question of discussing what Dr. Bantock calls "oophorectomy *versus* hysterectomy" out of the possibilities altogether if we are to go by primary results. So far as I can find recorded, my experience of this proceeding exceeds that of all other operators put together, and if I take the largest recorded experience of

hysterectomy, that of Sir T. Spencer Wells as contrast, I find the mortality of hysterectomy to be over 50 per cent.

It cannot, therefore, be a matter of surprise if I say that I do not agree with my friend, Dr. Granville Bantock, when he characterises the proposal to remove the uterine appendages as a preliminary to removal of the tumour as "unscientific and irrational." Dr. Bantock, in the paper from which I quote ('Lancet,' April 14th, 1883), uses the argument against the removal of the uterine appendages that in the "great majority of the cases of large tumours, the ovaries cannot be reached at all, or one may be within reach and the other not." But I have not found this to be the case. I have never failed to remove the appendages in a case of myoma where, after I had carefully examined the tumour, I had found no reason to desist on account of clear evidence of the tumour being malignant. In one case I removed only the appendages of the left side because I made certain there was neither tube nor ovary on the right side, and as my patient is cured, my experience by this exception is amply confirmed.

Again, Dr. Bantock argues: "nor should we ever dream of resorting to oophorectomy in a case of pedunculated fibroid on large multiple fibroids." Assuming that by "oophorectomy" (a term I have entirely discarded) he means removal of the uterine appendages; and that by "fibroid" he means "myoma," here, again, I entirely differ from him, for it is precisely in such cases that my most brilliant results have been obtained, and my whole experience is diametrically opposed to his when he says "experience has shown it to be useless in these two cases."

Finally, and this is the point to which the whole of the present paper tends, Dr. Bantock says: "I believe we are already in a position to determine which are the cases suitable for oophorectomy and which for hysterectomy."

I think I may be forgiven if I say that here I think Dr. Bantock is somewhat premature, and even with my own very large experience I am not inclined to dogmatise

on the subject. I am, however, of opinion that I am approaching a position from which some light will be thrown upon the question, though I am not at all disposed to argue it as merely a question of one operator *versus* another.

Out of my fifty-one cases of recovery I know that there are six cases of failure, that is, the secondary results of the operation are not satisfactory. There may be others, for with all the care I can give to the subsequent histories of my patients, I find it impossible to keep all of them under notice. Very likely cases of failure of which I have lost sight will turn up in the practices of other surgeons. But I do know that in thirty-eight cases absolute cures have been effected; and, leaving out those of date too recent for my present porpose, I can make out only four in which there is any possibility of there being failures not known to me.

Of the six failures actually within my knowledge, three have died of cancer, that is, the tumours have turned out to be malignant, and possibly were so at the time of the operation. This of course is a difficulty which covers the whole of our surgical work and is no argument whatever one way or the other in the present case. These cases would all have died of cancer whether the operation was removal of the appendages or hysterectomy.

The three remaining cases of failure have more interest because I think they point to the class or classes of cases in which hysterectomy will have to follow or to supersede removal of the appendages. In all these cases the tumours are growing, though there is complete arrest of menstruation, and I think it almost certain the tumours are not malignant. They are either fibro-cystic, or, what I think more likely, of the soft œdematous variety of myoma. The experience which Dr. Bantock has recently placed on record proves conclusively, I think, that the fibro-cystic tumours will not be arrested by removal of the appendages. This is as might have been expected, and when I find a tumour of the uterus to be cystic I

always remove it. But it is not always possible to tell a fibro-cystic tumour of the uterus, even by an exploratory incision, and therefore failures to cure uterine tumours by removal of the appendages are sure to occur occasionally from this reason.

I believe this will also be the case with the soft œdematous myoma. It is not a malignant disease, for the biggest and best example I have seen was removed by me nearly seven years ago, and the patient is now in robust health. So œdematous was it that an effort was made to tap it, by Mr. Furneaux Jordan, under the belief that it was an ovarian cystoma.

But I have had abundant evidence that the arrest of menstruation does not affect the growth at all, for I have removed four well marked and rapidly growing examples from women in whom menstruation had ceased. In one case the tumour had grown altogether after the menopause. Therefore, if I see good reason to believe that a tumour belongs to this variety I remove it, as the indirect evidence is to the effect that removal of the appendages will not avail. But here, again, mistakes will be made. The soft œdematous myoma has an invariably even ovoid outline, and its deceptive feeling of fluctuation gives it the character of a cyst, but even after an exploratory incision it will every now and then be quite impossible to decide whether a given tumour belongs to this class or not. Considering, however, that hysterectomy has at present, and as the use of the clamp in this operation is inevitable, is ever likely to have a very heavy mortality, I think we are bound in all cases of doubt to give our patients the benefit of that doubt and resort to the less formidable operation in the first instance.

We may take it, therefore, that like every other operation, removal of the uterine appendages for myoma will meet with a certain proportion of failures, but it is no more to be condemned on this account than is excision of the knee because many such cases have ultimately to submit to amputation.

The PRESIDENT was hardly prepared to accept Mr. Tait's classification of fibroids in place of the one in common use, the basis on which Mr. Tait's classification was founded being on the histology of the tumours instead of on their position in the uterine walls; the two were, however, not necessarily antagonistic. With Mr. Tait's view as to the delay in the occurrence of the climacteric in these cases he entirely agreed, and so with the inference as to the unadvisability of deferring operation in cases demanding it with the hope of the occurrence of the menopause. Mr. Tait's description of the vascular arrangements of myomas and his suggestions as to the starting points of these tumours were full of interest, but he would like further evidence as to the assumed sole, or even large, influence of the tubes in the phenomena of menstruation.

Dr. HERMAN had published a case in which the symptoms due to a fibroid polypus appeared first at the age of sixty-four, thirteen years after the menopause.* The after histories of patients on whom operations such as those described by Mr. Tait had been performed were of the utmost importance, for the operator was liable, unless he inquired carefully into the subsequent course of each case, to think that more benefit was conferred by the operations than was the fact; for patients who found themselves not improved by the treatment naturally consulted some one else, often without informing their discarded adviser, who, unless he made inquiry, might think that they did not come to him because they were well. Error of this kind might be avoided if, in compiling tables of cases, there were put after each case the date of the latest positive information concerning the patient's health.

Mr. DEWAR asked Mr. Tait (1) whether he, in removing the uterine appendages for fibroids, was careful to tie the uterine artery? (2) Whether it was enough to remove the Fallopian tubes, leaving behind the ovary or ovaries, and whether such a proceeding in a menstruating woman was not attended with danger? He had seen one case where the uterine appendages had been removed two years previously (without benefit) to a hysterectomy, this latter operation being necessitated on account of hæmorrhage.

Dr. MEADOWS thought that the system of classification of these fibroid growths which has been generally accepted was preferable to the one suggested by Mr. Lawson Tait, inasmuch as while that which he recommended was based merely on anatomical considerations, and was of little or no clinical value; the classification of these tumours as regards their site *quoad*

* 'Obstetrical Journal,' vol. vi, p. 14. A speaker having suggested that possibly this polypus was malignant, Dr. Herman, after the meeting, inquired of the patient's medical attendant (Dr. Timothy Richardson, Commercial Road), who ascertained that she was in good health.

the uterine walls was one founded on clinical observation primarily, and was therefore of the greatest practical value, not only as regards diagnosis, but also in reference to treatment, because that the surgical, and therefore curative, treatment of these growths must be governed by clinical observation of the symptoms and consequent diagnosis of their site. He also questioned the soundness of the author's statement that removal of the Fallopian tubes was of more importance than the removal of the ovaries in regard to the cessation of the menstrual function and the resultant atrophy of these growths, for he believed, on the contrary, that the ovaries and not the Fallopian tubes are the prime movers in menstruation, and he related a case in which he had removed both ovaries, and left the Fallopian tubes, for the cure of a uterine fibroid, and in that case menstruation ceased and never returned. He further doubted whether it was at present perfectly established that uterine fibromata uniformly ceased to grow after the cessation of menstruation. It might be the rule, but he felt satisfied that there were many exceptions, and while agreeing with the author in the high rate of mortality which occurred in operations for the abdominal removal of these tumours as compared with ovariotomy, he yet preferred this mode of treatment to that which sought for their cure merely by the removal of the ovaries.

Mr. Lawson Tait.—Referring first to the remarks of Dr. Meadows on the necessity of using the clamp, he would point out that in Dr. Meadows's case the patient was sixty-five years of age, and the tissues had all become shrivelled and consolidated, so that a uterine pedicle might be trusted to a ligature as certainly as that of an ovarian tumour. But if the patient had been under or near the climacteric it would have been very different. At that time of life a uterine pedicle shrunk away from the ligature in a few hours by the exudation of serum, and it needed little more than the examination of Sir Spencer Wells's list of cases to convince every one of the fatality of the ligature when applied to uterine pedicles. Another point referred to was the growth after the menopause. Nothing definite could be said on this point until the exact nature of the tumour was determined by microscopic examination. As said in the paper, Mr. Tait believed true myoma did not grow after the menopause. All uterine tumours, the nature of which he knew, which had so grown were either malignant or fibro-cystic. Further and very careful examination was wanted on this point. There was no doubt that occasionally removal of the ovaries alone did arrest menstruation, but according to his experience it was the exception. In answer to Dr. Herman he would say that he had never knowingly tied the ovarian artery, and he believed that to tie it would be a most difficult and

dangerous operation, if he might judge from a preparation exhibited by Sir Spencer Wells at the International Medical Congress. There could be no doubt that the after history of any untraced cases of failure was a difficulty, but as they would probably fall into the hands of other surgeons there would be every facility and disposition to disclose all the facts concerning them.

OCTOBER 3RD, 1883.

HENRY GERVIS, M.D., President, in the Chair.

Present—51 Fellows and 1 visitor.

Books were presented by Mr. C. E. Jennings, Dr. J. Poullet, the Council of University College, La Société des Sciences Médicales de Lyon, and the Gesellschaft für Geburtshülfe in Leipzig.

Charles Taylor Aveling, M.D., Robert Alex. Gibbons, M.D., and Albert Charles Butler-Smythe, M.R.C.P. Ed., were admitted Fellows of the Society.

Arthur Jukes Johnson, M.B. (Toronto); James H. Keeling, M.D. (Sheffield); Clarke K. Morris, M.R.C.S. (Spalding); Anundo L. Sandel, M.B. (Calcutta); and Frederick H. Tinker, L.R.C.P. Ed. (Hyde); were declared admitted.

The following gentlemen were elected Fellows:—John Archibald, M.B.; Cursham Corner, M.R.C.S.; J. King Keir, M.D. (Leytonstone); Edmund King Houchin, L.R.C.P. Ed. (Stepney); Walter Rosser, M.D. (Croydon); and Frederick Stocks, M.R.C.S.

The following gentlemen were proposed for election:—William T. D. Caldwell, M.D.; George Henry Jackson, M.R.C.S. (Tottenham); Edward Johnstone Jenkins, M.B. (Oxon.) (Sydney); Edmund Henry Pettifer, M.R.C.S.; and Alexander Walker, M.D., C.M. (Putney).

CASE OF HYPERTROPHY OF THE BREASTS.

By J. A. Mansell Moullin.

The patient is a thin strumous-looking girl, eighteen years of age, unmarried. The breasts began to enlarge at the age of fourteen, the time of puberty, and have continued to increase in size ever since. They are heavy, pendulous, very soft, and flaccid, and are affected symmetrically. The nipples are small, while the area of the areola is greatly extended. The patient complains of pricking and shooting pains darting through the breasts, which are somewhat tender, and it gives her pain to raise them up. There is no irregularity in the menstrual function and her general health is good. The parents and rest of the family are healthy except one brother who has spinal disease.

LARGE FIBRO-CELLULAR TUMOUR.

Dr. W. A. Duncan showed a large fibro-cellular tumour (of five years' growth) involving the clitoris and both nymphæ, the whole of which he removed. He also showed a multilocular compound ovarian tumour, one of the cysts having been ruptured during examination, causing intense collapse and peritonitis. The patient died without having sufficiently rallied for ovariotomy to be performed.

ARRESTED DEVELOPMENT OF ONE TWIN. DOUBLE PLACENTA.

Dr. Edis exhibited the placenta and a shrivelled fœtus which was retained for nearly two months, the older twin fœtus being born alive. He was indebted to Dr. Grinson for the opportunity of showing this interesting specimen to the Fellows.

M. W—, æt. 32, married seven years; mother of four children, youngest ten months, all born at full term, living, ceased to menstruate the first week in February, 1883, quickened early in June. She expected her confinement about the first week in November. When between four and five months advanced in pregnancy she bathed in the sea, beyond this she could assign no cause for the death of one fœtus. There was no attempt at miscarriage, and until the delivery was accomplished had no reason to suspect anything unusual.

On August 26th, at 3 a.m., she was confined prematurely of a shrivelled fœtus, and at 10.25 p.m. of the same day the second child was born. This latter appeared to be about the sixth and a half or possibly the seventh month of intra-uterine development, the exact calculated time being twenty-nine weeks. It survived its birth seven days, cried lustily, and at first seemed likely to live and thrive.

The placenta had been examined carefully by Mr. Sutton of the Middlesex Hospital.

It was double, the placentæ being attached at their margins, the right one the larger, five inches in diameter, with a portion of cord attached. The smaller one, four inches in diameter, presents a shrivelled appearance and is firm to the touch as though it were indurated. The umbilical cord is scarcely thicker than twine, and is attached to the placenta near its border, but to the opposite side to that of its fellow. Each placenta is

sharply defined from its neighbour by a raised margin where the two amniotic membranes come into contact.

The fœtus appears to be about the fifth month of development.

Dr. MALINS remarked that he had seen a similar case where the one child was born living at the eighth month, and its fellow flattened and shrivelled at the same time, its growth having been arrested at about the fourth month. The case was interesting as showing the power of toleration exhibited by the uterus in carrying one child to a viable period with the other as a foreign body, and also from a medico-legal point of view in relation to the time of conception and delivery. He mentioned that Cruveilhier had given an illustration of the same condition in a plate the description of which corresponded very closely with the specimens shown by Dr. Edis.

PLACENTA SUCCENTURIATA.

DR. CHAMPNEYS showed a placenta with an accessory placenta or "placenta succenturiata." This is liable to be left behind, and its retention may be quite impossible to diagnose from an examination of the afterbirth. It was with this view that he showed it.

Dr. DALY said that the specimen exhibited by Dr. Champneys had an important medico-legal interest. Some years back he was called by another medical man to see a woman who expired immediately on his arrival at her house. She had been attended in her confinement by an unqualified man about a week previously. She had died of repeated hæmorrhages. There was no doubt the unqualified man had failed to remove the placenta. The case gave rise to a prolonged inquiry by the coroner, and the defence of the unqualified man was that he had removed a placenta at the time of delivery, and that, therefore, the one which my friend discovered and removed, and which I saw, was a supernumerary placenta. The jury accepted this plea.

GANGRENE OF THE THIGH DURING THE SEVENTH MONTH OF PREGNANCY.

By Joseph Griffiths Swayne, M.D.,
CONSULTING PHYSICIAN ACCOUCHEUR TO THE BRISTOL GENERAL HOSPITAL AND LECTURER ON MIDWIFERY AT THE BRISTOL MEDICAL SCHOOL.

The case I am about to relate was obscure in its origin and rapidly fatal in its termination. The exciting cause of it is still to me a profound mystery; but possibly others here present, who have had a more varied and extensive experience than mine, may be able to throw some light upon it.

On Wednesday, April 4th, 1883, between 5 and 6 a.m., I received an urgent note requesting me to go into the country about eleven miles from Clifton to see a lady who had been suddenly taken with symptoms of premature labour. I went without delay in the carriage sent for me, but when I arrived at the house I found that the lady had been confined about a quarter of an hour before my arrival and that she had been attended by Mr. Salmon of Thornbury, who lived about a mile from the place. Mr. Salmon told me that the patient, Mrs. H— (whom I had not previously seen), was about thirty-two years of age, had been married nine months, and was scarcely seven months pregnant. She expected her confinement in rather more than two months and was coming up to London for the event, having engaged Dr. Brodie of Curzon Street, Mayfair, to attend her. She had, during last March, been travelling with her husband from the South of France during the bitterly cold weather which prevailed at that time. She then stayed two or three days in London before she went to her father's house near Thornbury, where she arrived on Saturday, March 31st. On the night of her arrival she complained of pain in her right groin, and there was a hardness about the size of a half crown on the upper and inner part of the right thigh, just over the adductor muscles.

On the following day she was violently sick for some hours. Mr. Salmon was sent for and prescribed some medicine. There was at that time little or no swelling of the part affected. On Monday, April 2nd, there was a more perceptible enlargement of the part, and on Tuesday, April 3rd, Mr. Salmon stated that there was a more diffused swelling in the limb, with hardness at the posterior and upper part of the thigh which he thought would end in suppuration.

As I mentioned before, the labour came on on the following day, Wednesday, April 4th, and terminated before my arrival. The labour commenced about 1 a.m. and terminated at 7 a.m. the same morning. The child was of scarcely seven months' development. It was a male and only survived its birth sixteen hours. Mr. Salmon told me that during the labour he was obliged to separate the knees widely with a pillow, so as to guard the swelling on the thigh from pressure as it was then very tender. When I saw the patient, the chief thing which I noticed was that her face was much flushed (she was usually pale) and her manner somewhat excited. I then examined the swelling. It was about the size of a man's fist and was situated on the inside of the right thigh about three inches below the saphenous opening. There was no discoloration of the part or fluctuation, but great tenderness on pressure, and a peculiar sort of boggy feeling to the touch. The confinement appeared to have been very favorable and was attended with no post partum hæmorrhage. The pulse was but little above the ordinary standard. The temperature from 100° to 102°.

On the following day (April 5th) I received a telegram requesting me to see her as soon as possible, as she had been much worse during the night. On arriving at the house Mr. Salmon told me that she had been delirious during the night, that there had been considerable elevation of the pulse and temperature, that the urine had been retained so that he had to use the catheter, and that he believed that mortification had come on in the swelling.

On examining it I found that this was the case. The nurse told me that early in the morning she noticed discoloration like that of a bruise in the part, and that about an hour after this the skin rose up in a bladder, which Mr. Salmon punctured. The skin then peeled off and left a dark brown, sloughy-looking surface, as I then observed. The nurse told me also that during the night after the confinement the lochial discharge became very scanty and offensive; by the time I saw her it had nearly ceased. Her pulse was then 134°, somewhat irregular, and very deficient in power; temperature 104°. Abdomen very tympanitic, with frequent hiccough; there was no uterine tenderness. We prescribed ether, ammonia, brandy, and frequent stimuli, with nourishing food at short intervals, such as milk, beef tea, egg-flip, &c., and also a barm poultice to the part. The vagina to be syringed with Condy's fluid and water. I then left her.

On the following day (April 6th) I went to see her in the morning about eleven, and found her much worse. She was then pulseless, scarcely conscious, and moribund. The whole of the upper and inner third of the thigh presented a dark discoloured appearance, and a distinct line of demarcation could be perceived between the sound and unsound portions. Dr. Brodie had been telegraphed for, and arrived from London shortly before me. However, she died about 12.30 p.m., before we left the house.

The history of this case shows evidently that the mortification was not a result of the labour, but rather that the labour was a result of the mortification, for the pain and swelling, which ended in gangrene, existed some days before any symptoms of labour were present. Yet the occurrence of labour had probably the effect of still further increasing the virulence of the symptoms. The cause of such very unusual symptoms must, I fear, ever remain doubtful. There was no history of any injury to the part affected, there was no inflammatory blush or other symptoms of erysipelas, and it is difficult to imagine that plugging of any vessels would be sufficient to induce gan-

grene in a part so freely supplied with arteries. Unfortunately we had no opportunity of making a post-mortem examination, so that the details of the case are necessarily incomplete, so much so that I should not have brought it forward had not its extreme rarity appeared to me to render it worthy of record.

Dr. BURCHELL said that though the detail of symptoms was not sufficiently clear to lead to a *positive* opinion, he could not help believing that the disease was one of "strangulated femoral hernia;" the position of the swelling below the saphenous opening not being conclusive against that decision.

Dr. HERMAN asked if the case was not one of gangrenous carbuncular inflammation—the form sometimes called "malignant carbuncle"? He did not think the gangrene could be due to embolism (as a previous speaker had suggested), for its extent and limit was not that of the parts supplied by any particular vessel or vessels.

Dr. SWAYNE, in reply, said that he still felt quite at a loss as to the cause of gangrene in this case. The most probable suggestion, he thought, was that of Dr. Barnes, who attributed it to undue pressure on the vessels of the part affected. The patient, he had been told by one of her friends, had been remarkable for an excessively small waist. If this peculiarity of figure were due to tight lacing he could easily understand how the gravid uterus might be forced down so as to make very injurious pressure on the external and internal iliac vessels of the right side, especially during a long and very fatiguing journey in very cold weather, and when in all probability a constrained position was maintained for many hours. The situation of the tumour precluded the idea of strangulated femoral hernia, which had been thrown out in the course of the discussion; the absence of diffused redness at the onset that of phlegmonous erysipelas, and the vesication and absence of any head that of malignant carbuncle; whilst at the same time the history of the case was opposed to either of these suppositions.

ON THE OS UTERI INTERNUM, ITS ANATOMY, PHYSIOLOGY, AND PATHOLOGY.

By J. Henry Bennet, M.D.,
FORMERLY OBSTETRIC PHYSICIAN TO THE ROYAL FREE HOSPITAL, LONDON.

The facts which I wish to bring before the Obstetrical Society are not new to me, inasmuch as I published them in the second edition of my work on 'Uterine Inflammation' in 1849, thirty-four years ago. They appear, however, to have been lost sight of, or not to be recognised by recent writers on gynæcology, so I once more bring them prominently forward. They are most important, and have a direct bearing on various points in uterine therapeutics. (They will be found more *in extenso* in the fourth edition of my work, 1861.)

The uterine cavity is in reality formed by two cavities, that of the cervix and that of the uterus proper, each being about an inch and a quarter in length. As the one passes into the other there is a narrowing, or contraction, usually called the os uteri internum or isthmus uteri. This os internum is not merely a narrowing or isthmus, but a sphincter, like the sphincter ani or the pylorus. It is formed by the transverse, circular, annular fibres, which enter so largely into the structure of the cervix uteri. The anatomical examination of the structure of the cervix shows that the number and density of the circular or annular fibres in this region is such as to render the existence of a vital sphincter quite feasible. Its existence has been admitted by various authors, and in France it was long called by my name—"Bennet's sphincter."

The ordinary physiological state of circular muscles, which close cavities, such as those of the anus and pylorus, is *contraction*. Such I believe to be the normal rest state of the uterine sphincter, contraction, closure. If an attempt is made to pass the metallic uterine sound into the

uterine cavity in a healthy woman, free from ante-flexion or retro-flexion, ante-version or retro-version, especially in a nulliparous woman, it is all but universally arrested at the os internum, either by the naturally closed state of the sphincter, or by a vital contraction occasioned by the contact of the sound. Generally speaking, a considerable amount of pressure is required to overcome this contraction in the young, perfectly healthy, menstruating female. If, instead of using the ordinary metallic sound, a small wax bougie is used, warmed and passed very gently through the cervical canal to the os internum, it generally passes through the latter as far as the fundus of the uterus, and that in the very cases in which the attempt to pass the metallic sound has failed. The sphincter relaxes to the gentle pressure of a warm soft bougie. The difference of result is illustrated by what occurs when an attempt is made to dilate rapidly by the finger the sphincter ani; it resists brusque pressure, but gives way, relaxes, yields to gentle pressure.

It was in experimenting in this manner with small wax bougies in 1846, that I discovered that the uterine canal in nulliparous women is not straight, anatomically, as was supposed, I believe, by all anatomists, but curved with an anterior curvature. The wax bougie, if left a couple of minutes *in sitû*, takes and retains a slight curvature of this description. This congenital anterior curvature of the uterus was later recognised *in sitû* by M. Boullard, of Paris, and was demonstrated by freezing the pelvis in America. It is now, I believe, generally recognised. In some congenital cases it is very much exaggerated, giving rise to a congenital and irremediable anteversion of the body of the uterus of a very marked character. In such cases the uterus may be quite crescent-shaped. I have known many instances in which females have been absolutely tortured in the vain effort to remedy or modify this natural congenital condition, which even pregnancy does not always change. I would remark that when I thus use a small wax bougie I employ the specu-

lum in the dorsal or lithotomy position, as the warmth of the vagina softens the small bougie so as to make it useless.

As pregnancy advances the cavity of the cervix and the os externum gradually expand and open, but the cavity of the uterus remains closed by the vital action of the sphincter which constitutes the os internum. This sphincter is no doubt greatly strengthened by the development during pregnancy of the circular or annular fibres that form it, and its functions are then self-evident. There is a large cavity, which requires closing like that of the stomach and of the rectum, and the existence of a strong sphincter becomes an anatomical necessity.

There are other "physiological" evidences of the existence of a sphincter at the os uteri internum, endowed with the ordinary intermittent vital functions of sphincters in general. It usually relaxes before, during, and after menstruation. At these epochs it is much easier to penetrate into the uterine cavity, either with the metallic sound or with a wax or gum-elastic bougie; the sphincter evidently relaxes physiologically. Probably the same phenomenon takes place during congress, to admit of the entrance of the spermatic fluid into the uterine cavity.

I may, I trust, be pardoned for going a long way back in order to fully explain how I arrived at the above conclusions.

I commenced practice as an accoucheur and gynæcologist in 1843, just forty years ago, and in 1845 published the first edition of my work on 'Uterine Inflammation,' then all but unknown to, and all but disregarded by the profession. That such was the case will be at once recognised on referring to the works of Ashwell and Lever, the classical treatises of the day, the accepted guides of practitioners in uterine pathology and therapeutics. A few months afterwards Sir James Simpson, already celebrated as an author and a practitioner, and the Professor of Midwifery at Edinburgh, called on me. He told me that he had procured my book as soon as it had appeared, had

read it carefully through twice, had tested my statements in his public and private practice, and had found them to be correct in every respect. He was in London to attend a noble lady in her confinement, and remained in town several weeks, during which time I saw him constantly. He then told me that he had made what he considered a great discovery, viz. that sterility was to be attributed in most cases to spasmodic or morbid closure or contraction of the os uteri internum, and that he had contrived an instrument for dividing the os internum, which he had named metrotome. This operation, he said, had proved a radical cure in his hands in many cases. When he left he gave me his own metrotome, adding that it had been a great friend to him, and that he hoped it would prove the same to me.

Professor Simpson communicated to me his enthusiasm on this subject. I found the condition he described—closure of the os internum on slight pressure with the metallic sound—in all or nearly all the sterile women I examined. Concluding that this was the philosopher's stone in the treatment of sterility, on the faith of Professor Simpson, for two or three years I divided the os uteri internum in nearly all the sterile women I met with. I followed the Professor's *modus operandi*, but first made it a rule to examine the patient with the speculum, and to remove all inflammatory lesions that might co-exist. When the closed os internum in a healthy female, or in one rendered healthy by preliminary treatment, did not admit the end of the metrotome I dilated the cervical canal, using the Professor's compressed sponges, which he also at that time introduced to my notice. I invariably made two small incisions, one on each side, instead of one deep one, to avoid hæmorrhage. There are, or were, traditions at Edinburgh of patients having died from hæmorrhage after division of the os internum, but I never had any serious accident of the kind. I remember, however, having on several occasions plugged the cervical canal on the occurrence of rather free bleeding, a pro-

cedure which I believe I was the first to propose and to adopt. If the cervical canal is well plugged in the way I recommend, with pledgets of cotton rammed in and tied to strong threads, brought outside for subsequent extraction should they not be spontaneously expelled within twenty-four hours, serious hæmorrhage in non-pregnant women becomes impossible. Indeed, if this procedure is adopted in uterine hæmorrhage from whatever cause no non-pregnant woman need die. Even in pregnancy in its early stage this mode of plugging is the best treatment in the case of severe hæmorrhage in connection with impending abortion, that is, when all hope of saving the fœtus has been given up.

I never had any subsequent accidents—metritis, ovaritis, or abscess of the lateral ligaments, although I treated the whole business as a surgical trifle, which it was in my eyes, as in those of Professor Simpson. I usually operated in my consulting room, sent the patients home in a cab soon after, very seldom went to see them at their own house unless they sent for me, merely taking the ordinary fee. This immunity from subsequent accident I attribute to my never operating except on a perfectly healthy uterus and cervix, and to my always operating about six days after menstruation, when I could calculate on a full fortnight of uterine rest between the operation and the molimen hæmorrhagicum of menstruation. Many uterine operations are performed, I am well aware, when the cervix and uterus are the seat of chronic inflammation, under the idea that the operation will remove the inflammatory disease. Instead of doing so it not unfrequently fires the train, and leads to all kinds of pelvic complications.

I nearly always used Professor Simpson's stem pessaries, giving them a gentle anterior curvature, after the operation. I introduced the first twenty-four hours after the operation, gradually increasing the size. By this mode of treatment I usually obtained the results foreshadowed by Professor Simpson in his conversations with me. At the end of two or three weeks there was a free communication

between the cavity of the cervix and the cavity of the uterus, through the os internum or isthmus, the metal sound passing freely from the one to the other.

I was greatly pleased, thought the patients permanently cured of the presumed stricture, and concluded their impregnation was all but certain to take place in the course of a few months. I therefore dismissed them, exacting, however, a promise that they would call on me again in from six to twelve months' time "that I might see if the cure was a permanent one." This is a precaution that ought always to be taken in uterine therapeutics, and especially in surgical therapeutics. I am constantly reading reports of successful treatment in uterine pathology, which I cannot accept as conclusive, because this precaution has not been taken. Women suffering from uterine ailments are so nervous, so hysterical, so fanciful, so anxious to get better, so prone to think themselves better for a time, especially if they esteem and like the doctor who attends them, that little reliance can be placed on their first impressions and statements. This is more especially the case in some of the minor forms of uterine surgery, incisions, sewing up, and replacements. The celebrated gynæcologist comes with a flourish of trumpets, performs the operation which is to radically cure years of uterine suffering, to modify profound and chronic morbid functional activity of the uterine organs, and then soon withdraws, on the "veni, vidi, vici" principle, perhaps never to see the patient again. The only test, however, of his real success is the actual condition of the patient six months or a year after the operation.

Tested in this crucial way I generally found that I had not cured the sterility, or permanently modified the condition of my patients, even anatomically, when they returned, as requested, six, eight or twelve months after the operation. In the very great majority, indeed in nearly all, the sterility had persisted, and the uterine ailments and deficiencies were either pretty much the same

as before, or the improvement was to be accounted for by the previous removal of inflammatory lesions. In most cases, especially if the incisions made had been deep ones, the closure of the os uteri internum was more decided, more difficult to overcome than before, evidently from cicatricial tissue. When the sphincter ani is divided to relieve spasmodic constriction it is found necessary to divide the entire thickness of the sphincter to obtain a permanent cure. The partial division of its fibres is, I believe, seldom followed by a permanent cure. In the case of the cervix uteri, only a very few of its circular fibres can by any surgical possibility be divided. The great mass of these fibres must remain undivided.

Thus a long series of observations and experiments, undertaken most enthusiastically and hopefully, under the guidance of Professor Simpson himself, led me to the results enunciated and foreshowed in the preceding pages. Firstly, that closure of the os uteri internum, when not carried to an extreme degree, is not a morbid but an anatomical and physiological condition. Secondly, that the surgical division of the os internum is not the radical cure for sterility, &c. that Professor Simpson and his followers supposed it to be, does not give permanent patency to the os and is best replaced by other modes of treatment. Such are compressed sponges, and gradual dilatation by bougies, when it is thought advisable to dilate on other and rational grounds. A patent state of the os internum, a condition which allows the metallic sound to penetrate freely and easily into the uterine cavity, in my experience, rather indicates disease than health, except at the menstrual period. The os uteri internum relaxes, opens, when there is endometritis, or even severe endocervitis, the muscular fibres being paralysed by the inflammation of the mucous membrane, as in enteritis. It also relaxes and opens when there is structural aggrandisement of the body of the uterus from the presence of a fibrous growth, as also from chronic inflammation and hypertrophy of the tissues of the uterus. It necessarily relaxes after death,

as does the sphincter ani. The tonic vital contractility of all sphincters and of organic muscular tissue disappears when life is brought to a close.

That these physiological and anatomical facts have a most important bearing on uterine therapeutics becomes self-evident on the slightest consideration. Setting aside the various modes in which they apply, I will again refer to the question of sterility. It is generally assumed that one in five, six, or seven married females remains permanently sterile. In the census of 1860 there were half a million of married couples without progeny. If closure of the os uteri is a physiological not a pathological condition, all these women on examination would *erroneously* be pronounced sterile from a pathological cause—stricture of the cervix uteri internum—by those who do not accept the views I bring forward. They would consequently be all, except the older ones, considered fit subjects for surgical treatment, more or less severe, according to individual views. What a fine field for those who profess specially to treat and to cure sterility; nearly half a million of women to operate on!

This question, like all other anatomical ones, is very easy of solution. Let my hearers use the metallic sound and wax bougies with the nulliparous women they may have to examine during the next few weeks, taking all the precautions I have indicated. It seems impossible to me that they should not arrive at the same conclusions as myself; my uterine practice of any one week during the last thirty-six years would lead to them. The women examined, however, must not present the pathological conditions which, as I have stated, relax the uterine sphincter.

In conclusion I would emphatically remark that I do not wish or mean to condemn dilatation of the os uteri internum in every possible instance. So far from that, I myself occasionally resort to it. There are cases of exaggerated or spasmodic constriction, organic or vital, of pseudo-membranous dysmenorrhœa, of confirmed steri-

lity in youthful subjects, in which an abnormal dilatation of the uterine isthmus may be the best treatment to be employed. I merely assert that a closed state of the os uteri internum is the natural condition of the region; whilst a patent condition is generally the indication of a morbid condition of the uterine organs, and that to institute surgical treatment in order to remove a physiological state is a gross surgical error, and leads and has led to very erroneous and, in my eyes, unjustifiable practice.

Dr. GALABIN said that he had no doubt that Dr. Bennet's view was perfectly correct, that the internal os formed the chief sphincter of the uterine canal, and one of considerable power. This was proved by the sharp constriction often found at this point upon a laminaria tent, and by the mode in which the internal os often closed up again rapidly after being dilated by tents or other means. But he was not prepared to go so far as Dr. Bennet in saying that the internal os was normally completely closed. No doubt it often resisted the passage of the ordinary sound with a bulbous end, but it would allow a somewhat smaller one to pass. He was accustomed himself to use a sound without any bulb at the end and one eighth of an inch in diameter. He very rarely found any difficulty or resistance in passing this through the internal os if once the direction of the uterine canal had been hit upon, although a hitch might often arise at this point in consequence of flexion of the canal. He thought further evidence was much to be desired with regard to the cure of sterility by incision or dilatation of the cervix. Though he could not give actual numbers his impression was that he had not seen such a large proportion of pregnancies follow after incision as described by Dr. Barnes, but a greater relative number after dilatation by bougies, which would affect the whole canal. He thought it would be of great value if some of those who performed the operation often would give the number of pregnancies following in a complete series of consecutive cases. The only such series he remembered was one recorded by Dr. Pallen, of New York, in which out of more than 300 operations pregnancy followed in thirteen or fourteen cases only. This did not seem at all a greater number than might be accounted for by coincidence merely, if incision of the cervix had no tendency to cure sterility.

The PRESIDENT expressed his sense of the indebtedness of the Society to Dr. Bennet for giving them so historically interesting and valuable a paper. On the point raised by Dr. Barnes as to the greater advantage of dividing the outer os rather than the

inner in cases of narrow cervical canal, he would like to say that formerly he very largely followed Dr. Barnes's practice, and rarely incised the inner os. But of late years, in cases where there was evident constriction of the inner os, and of the existence of such cases he had no doubt, he had divided the inner os with the single-bladed metrotome, and his results had been decidedly better. On the other hand, where the inner os was fairly patulous, and the dysmenorrhœa and sterility were the result of constriction affecting the os externum alone, he was quite satisfied with its division, and the resulting shortening and opening up of the cervical canal.

Dr. HEYWOOD SMITH said that as the discussion on the paper was turning upon incision of the cervix he wished to protest against the use of scissors for that operation; for with scissors the incision was usually made too extensive. He agreed with what had been said against the use of the double hysterotome, and thought the most scientific method of procedure was to place the patient in a semi-prone position, hook down the uterus to the vulval orifice, and make the necessary incision from within outwards with Sims' narrow knife, as then the extent of the incision could be better regulated, and the natural function of imbibition possessed by the external os not destroyed as was often done by too free a division.

Dr. PLAYFAIR said he had no intention of entering into the general subjects of the paper with which Dr. Bennet had favoured this Society. Were it not that some speakers had already expressed their belief in the frequent occurrence of stricture of the internal os uteri as a frequent cause of sterility he would have been inclined to say that Dr. Bennet was slaying the slain in arguing against it. For his own part he believed very little in its existence at all, and certainly not at all in incision of this part for the cure of sterility. That incision of the external orifice occasionally in well-selected cases was followed by impregnation he was quite ready to admit. What he wanted, however, to point out was that in many cases, and this point had not been alluded to by previous speakers or by the author of the paper, it acted not only by enlarging a pin-hole os, but by remedying the congenital conical cervix so often associated with it. This was probably more often the cause of sterility than stenosis. The operation was no doubt legitimate, and sometimes successful, but he believed it to have been far too often and too indiscriminately performed. With regard to an observation that had been made as to the possibility of too deep an incision subsequently requiring trachèlo-raphe that indicates an entire misapprehension of the proper scope of that operation, which was never required except in cases of traumatic laceration of the cervix leading to secondary morbid states of the cervix and uterus.

Dr. CHAMPNEYS wished to point out a fallacy in the diagnosis of stenosis of the os internum by the passage of the sound. When difficulty is encountered in passing the sound this fact is generally considered sufficient, and a diagnosis of stenosis is made. But this by no means follows; this difficulty may be due to passing the sound in the wrong axis, and it often happens that the point catches on a fold of mucous membrane, especially if the cervical cavity is dilated and rendered dome-shaped rather than cylindrical, and that even when the os internum is proved to be larger than usual. When, however, the sound has been passed, and the knob is gripped as it is withdrawn, it follows that the passage at that point is smaller than the knob.

Dr. AVELING said he was sure the contraction causing dysmenorrhœa and sterility was sometimes to be found at the os internum, and he believed division gave more permanent relief than dilatation. He did not use intra-uterine stems after the operation, having found it sufficient to open up the divided surfaces by passing the sound once a day for the first week, and then at longer intervals until healing had taken place.

Dr. EDIS, in reply to Dr. Bennet's statement in his paper that scarcely any modern authors on gynæcology alluded to the condition of the internal os uteri, stated that he (Dr. Edis) had given the subject full consideration in his work on 'Diseases of Women.' He agreed with the President in his remarks that although division of the external os uteri was in many cases sufficient to overcome dysmenorrhœa and even sterility, there were instances in which division of the internal os uteri as well was requisite. Each case must be treated on its merits. No general rule could be laid down applicable to all cases. Division of the external os with dilatation of the internal os, and the wearing an intra-uterine stem for a short time, the patient being kept quiet and carefully watched, was the treatment he usually adopted for the condition spoken of as conical cervix with pin-hole os, the internal os being also constricted.

Dr. MURRAY considered Dr. Bennet's remark a true one, that time alone can show the value of one method of treatment over another. He thought the operation of dividing the os uteri, more or less, *for sterility alone* of doubtful utility. Many cases had come under his notice where this practice had been carried out without good results. It ought not to be resorted to simply at the request of the patient, who is anxious that something *more* should be done. The operation was by no means free of risk to life, and when performed required great care throughout.

Dr. HENRY BENNET thanked the President, Dr. Barnes and other members for the very cordial and flattering manner in which they had spoken of his past gynæcological career. He gathered from all that had been said that his views respecting

the existence of a real sphincter at the isthmus uteri, and of its physiology and pathology, were generally accepted, although some might not go so far as he did. His object in bringing them again forward was to counteract the teachings and practice of those who held contrary views. The late Sir James Simpson, up to the end of his career, and his pupils, among whom were many American gynæcologists, Dr. Marion Sims in particular, considered the natural coarctation he described to be a morbid condition. In their eyes it is one of the principal causes of sterility, and the origin of many other uterine ailments. This doctrine led to more or less severe surgical practice, dilatation or division of the os uteri more or less complete. The operation of deep division was formerly, and is still, he believed, much too frequently performed by some practitioners, under the very erroneous impression that by establishing patency of the os a complete and favorable change takes place in the state of the patient. Neither this nor any other operation can or does change the nature and condition of a female who may have been suffering for years from uterine and ovarian pathological conditions. In such cases not unfrequently the constitution is defective, ovulation and the uterine functions are, and remain, stormy until they cease, whatever surgical treatment is pursued. In them the *veni, vidi, vici* surgical treatment signally fails. He was glad to find one speaker endorsing the opinion he had expressed that at least six months or a year should elapse after any uterine treatment before its results could be fairly appreciated. There are waves of opinion in gynæcology as in everything else, scientific and non-scientific, and perhaps, as Dr. Playfair had suggested, he was partly slaying the slain. The abuse of surgical treatment in gynæcology might be on the wane in England, but it certainly was not so elsewhere. It was desirable, therefore, to remove erroneous views respecting the os uteri internum, and to establish its anatomy, physiology, and pathology on a sound basis to prevent unnecessary surgical treatment being resorted to. Other waves of opinion were setting in equally exaggerated in their character. As for instance, in America the unjustifiable sewing up of the lacerated cervix uteri for insignificant lesion, easily cured by the simplest local treatment, and with us the abuse of pessaries. In his winter home at Mentone he was constantly picking out pessaries from the vagina of females who had been travelling all over Europe with them for many months, a year or more, turned over to their husbands, and suffering from all sorts of concomitant or subsequent inflammatory complications. These complications had either been overlooked when the pessary was introduced or had been created and exaggerated by its presence under such unfavorable conditions.

NOVEMBER 7TH, 1883.

HENRY GERVIS, M.D., President, in the Chair.

Present—56 Fellows and 8 visitors.

Books were presented by Dr. G. de G. Griffith, Dr. Lewis D. Mason, Dr. Wahltuch, and the Smithsonian Institution.

Charles Harford, L.R.C.S.I., and Aaron Langley, L.R.C.P., Ed. were admitted Fellows of the Society.

J. King Kerr, M.D. (Leytonstone); Oliver Calley Maurice, M.R.C.S. (Reading); J. Irvin Palmer, M.R.C.S. (Kingston-on-Thames); and Walter Rosser, M.D. (Croydon) were declared admitted.

The following gentlemen were elected Fellows:—William T. D. Caldwell, M.D.; George Henry Jackson, M.R.C.S. (Tottenham); Edward Johnstone Jenkins, M.B. Oxon. (Sydney); Edmund Henry Pettifer, M.R.C.S.; and Alexander Walker, M.D. (Putney).

The following were proposed for election:—J. Hewetson Bertolacci, L.S.A. (New Wandsworth); Charles Hamilton Hone Cameron, L.R.C.P. Lond. (Harlesden); F. Richard Eccles, M.D. Toronto (Ontario); Montagu Handfield Jones, M.R.C.P. Lond.; Arthur Newsholme, M.D. (Clapham); Walter Pocock, M.R.C.S. (Brixton); and Adolphus J. Richardson, M.B. Cantab.

SUBPERITONEAL UTERINE FIBROIDS.

Dr. Alfred Meadows exhibited two specimens of subperitoneal uterine fibroids which he had successfully removed from two patients, complete recovery resulting in both cases; in one the tumour weighed about half a pound, in the other it weighed about five pounds. Dr. Meadows also exhibited a fœtus which had apparently reached about the seven month and which he had removed by abdominal incision in a case of ventral pregnancy, the patient also making a complete recovery. The operation was performed in consequence of severe constitutional disturbance arising from suppuration within the cyst. The cyst wall was attached by interrupted sutures to the abdominal wall and carefully washed out until it contracted down to a mere sinus and finally healed. The pregnancy occurred about fifteen months previously.

OBLIQUE RACHITIC PELVIS.

Mr. W. S. A. Griffith showed an oblique rachitic pelvis from a nulliparous woman, æt. 47. From the absence of marked spinal curvature and from the appearance of the specimen, Mr. Griffith held that the obliquity was due to the unequal length of the distorted legs, the left (the side of the obliquity) being one inch shorter than the right and more bent.

The specimen corresponded closely with the description by Leopold, quoted by Dr. Champneys in his paper on "Scoliosis" in vol. xviii of the 'St. Bartholomew's Hospital Reports.'

Mr. Griffith also showed, for the sake of comparison, specimens of rachitic, scolio-rachitic, and scolio non-rachitic distortion.

The PRESIDENT remarked on the interest of the specimen, and called attention to the fact that the left half of the sacrum was smaller than the right, although no synostosis of the sacro-iliac articulation existed.

Dr. BARNES observed that he had figured in an early volume of the 'Obstetrical Transactions' a pelvis in which the two sides were unequally developed owing to unequal length of the legs.

DYSMENORRHŒAL MEMBRANE.

DR. WYNN WILLIAMS exhibited a fibrinous cast of the uterus (dysmenorrhœal membrane) passed by a patient, æt. 32, admitted into the Samaritan Hospital October 16th; married eleven years, three children, age of youngest seven years. Has complained of pain off and on since last confinement. Ten days before admittance had severe pain in stomach with sickness, which recommenced the day previous to admittance. On examination a suppurating cyst was found in the right labium, which was dissected out on the 17th. On the 20th period commenced, on the 23rd passed the membrane, which is hollow and a complete cast of the uterus. It was discovered by the nurse, the patient having passed it without pain or even being aware of it. It could not be ascertained that she had ever passed such a membrane previously.

Report on Hydatidiform Mole shown by Dr. W. A. Duncan at July Meeting.

HAVING examined the specimen shown by Dr. W. A. Duncan, we are of opinion that it is an early stage of hydatid disease of the chorion.

F. H. CHAMPNEYS.
ALBAN DORAN.
W. A. DUNCAN.

Report on Ruptured Ovarian Cyst shown at October Meeting by Dr. W. A. Duncan.

DR. DUNCAN'S specimen is a multilocular ovarian cyst; most of its secondary cysts contain glandular, but not papillary or solid sarcomatous, contents. Many of the secondary cyst cavities communicate, more or less freely, by perforations of the partitions between them, the result of atrophy of the tissue of those partitions. On the surface of the main cyst, a few inches above the seat of attachment of the pedicle, is a rent in the cyst wall about the diameter of a florin. Around this rent the cyst-wall is much thinner, having formed the outer wall of a secondary cyst which contains no glandular growths. The pressure of the fluid contents of this secondary cyst has been the most probable cause of the thinning and subsequent rupture of its outer wall. At another point on the surface of the tumour, where the main cyst-wall bears the same relation to another secondary cyst, the same process of thinning is in progress. There is no evidence of local inflammation of the cyst-wall around the seat of rupture; it has become extremely thin by simple distension.

ALBAN DORAN.
W. S. PLAYFAIR.
W. A. DUNCAN.

THREE CASES OF PYOSALPINX.

By LAWSON TAIT, F.R.C.S.

I HAVE already written and said a good deal on the interesting disease which results from an inflammatory occlusion of the Fallopian tube, and known as pyo- or

hydrosalpinx according to the nature of the contents of the cysts there found.

The subject is dealt with in short papers published by the Pathological and Obstetrical Societies, in various papers in the 'Medical Times and Gazette,' 'British Medical Journal,' 'Birmingham Medical Review,' and several American journals, yet it seems difficult to persuade some of the members of the profession that the disease is a very serious one, that it causes intolerable suffering, is very often fatal, that it is wholly incurable save by surgical operation, and that the operation for its cure has had in my hands absolutely no mortality at all. Up to the present moment I have operated on sixty-two cases of this kind, and not only has there been no death, but I know of only one case which has not been cured of all her suffering. Two of the patients are since dead, one of acute English cholera of twelve hours' duration, and one of self-imposed starvation due to acute melancholia. Six of the patients I have lost sight of, but of all the others I can give an account up to a very recent date.

The disease is not new, as it was fully described and figured many years before I was born. That it is a very fatal disease we have abundance of evidence on such good authorities as Bernutz and Wilks, and the literature of peritonitis affords numerous instances of death due to general inflammation of the abdominal cavity arising from a ruptured Fallopian cyst.

The great majority of the cases which have come under my care for this disease belong to the very numerous class of suffering women who wander about from one consulting-room to another seeking relief and finding none, except in laparotomy. Very many of them have been subjected to all sorts of devices, as division of the cervix, to innumerable tortures by pessaries and many other contrivances useless in their disease. In one case the medical attendant tells me this amusing story. She sent for him, and on her table lay a tray covered with

pessaries, all of which she had worn. "This," she said, taking up one, "was placed for retroversion by the celebrated Dr. A—, this was used by Dr. B—, this was invented by Dr. C—, but this I feel sure must have been devised by the devil himself, so awful was the torture it gave me."

In a recent paper by Dr. Granville Bantock ('Lancet,' April 14th, 1883), an argument is used against views I have expressed concerning the physiology of the Fallopian tubes, to the effect that they cannot have anything to do with menstruation because when they are diseased menstruation goes on. It does so, most truly, but one of the most constant features of menstruation when the tubes are diseased is that it is excessive, often amounting to severe menorrhagia, and this I regard as a strong argument in favour of my views. The pain of menstruation in most cases is excessive, often agonising, and it begins always before the appearance of the flow—this feature being of great assistance in the diagnosis. The pain excited by intercourse is generally so great as to lead to the entire discontinuance of the marital act.

The patients are always sterile, and the history of the illness can generally be traced to an attack of pelvic inflammation occurring after a labour or a miscarriage, or often after the suspicion of a gonorrhœa. In a few cases I have failed to get any such history.

I select the three following cases chiefly because they illustrate the frequent result of the disease in general suppurative peritonitis, which would doubtless have proved fatal but for surgical interference; and this fact I could emphasise by many other instances. They also illustrate three of the classes of different origin, and the first in particular gives me an opportunity of speaking on a matter concerning which my experience is every year strengthening my convictions, I mean the mischievous effects of the indiscriminate use of pessaries.

CASE 1.—In the narration of this case I am absolutely obliged to suppress all dates, names, and localities, to

secure that there shall be no identification of the case. The reason of this will soon become evident, but I have placed in the hands of the President all these facts, together with the surgical record of the case, in order that there may be no room for a captious critic inclined to dispute my statements.

Some months ago I was visited by a practitioner very well known for his attachment to the gynæcological department of medical practice and for his skill therein. He was in great distress concerning a patient in whose uterus he had placed a stem pessary. She had been married for many years and had had no children. Her menstruation during that time had been profuse, more frequent than normal, and always accompanied by pain so severe as to keep her in bed for several days. She had been under the care of many medical advisers special and general, and had been treated for ulceration of the womb and other local conditions of more or less fanciful nomenclature. The only result was that she got gradually worse. My friend's written description of her pelvis when he first saw her is as follows :

"With the exception of some tenderness in the hypogastrium, external examination only gave negative results. Vaginal examination revealed the uterus lower in the pelvis than normal and retroflexed, the fundus directed rather to the left. The abnormal position of the uterus was easily rectified by the gentle introduction of the sound through a channel freely patent, the uterus being thus proved to be moveable and the cavity of normal length. To the right there was a sense of resistance and some tenderness. Her sufferings were relieved by the administration of morphia, hot vaginal injection, and opiate stupes. A few days after the cessation of the catamenia the pain and tenderness diminished, and I (the doctor whose case it was) introduced a Wynn-Williams pessary with intra-uterine stem to rectify the malposition, this being done with antiseptic precautions. Eight days afterwards I saw her and found that for the previous two

days she had pain recurring at frequent intervals, that her pulse was 100 and her temperature 100°. I sent her to bed and removed the pessary. For some days the temperature and pulse became normal, though the pain and tenderness did not wholly disappear. To the right of the uterus I found a decided fulness, giving the sense of being fluid, and I decided to introduce an aspirator needle. But early next morning (before aspiration was performed) I was hurriedly summoned to her; I found her condition much altered, the pain having increased and become general over the abdomen. There was frequent violent retching and retraction of the knees towards the abdomen. The features were sharp and pallid, the eye-balls shrunken and glassy, the pulse small and rapid, and the temperature 105°.

"I saw that no time was to be lost if her life was to be saved, and I was fortunate in obtaining your immediate attendance with the result that she rapidly rallied from her alarming and collapsed state, pain and retching instantly ceased, and the temperature gradually subsided, becoming normal late in the evening."

The gist of what is given above, save the last sentence, was communicated to me in my consulting room on the morning of the access of the alarming symptoms, and I had no difficulty in deciding, and I communicated my views there and then to my friend, that his patient had been suffering for years from chronic pyosalpinx, that the pessary had started it into an acute form, that the tube had burst, that she was now suffering from general peritonitis, and that the only hope of saving her was in abdominal section. He accepted my recommendation, and we started off by train as soon as my preparations could be made. I found the patient just as he described with abdominal distension and evidence of fluid in the peritoneum. I opened the abdomen and gave exit to a large quantity of fetid, flocculent, purulent fluid. I found the right tube densely adherent, that it had been distended with fluid and had burst. I removed it along with the ovary, and the right

ovary being adherent in the *cul-de-sac*, I removed it as well. I cleaned and washed out the abdomen as well as I could and inserted a drainage tube.

Her recovery was somewhat tedious but it is complete.

I do not think I can comment upon this case better than by quoting the words with which my friend closes his account to me of this interesting and most instructive case.

"In reviewing this case, I cannot but attribute to the mechanical treatment the consequences which followed it, though this is the first time after a prolonged employment of uterine stems that I have had such a mishap. It has, however, taught me a lesson inasmuch as it shows me how difficult it is sometimes to discriminate the cases where they can be safely employed, and also the dangerous results to which they are capable of giving rise sometimes."

I can only endorse these words. I have at least one bitter lesson in my own practice as to the mischief done by intra-uterine stems, and the more I see of them the more I distrust them and the less frequently do I employ them.

CASE 2.—The following account of this instance is taken from a paper published in the 'British Medical Journal' of February 17th, 1883, and I introduce it here chiefly in order to give the subsequent history:

"On the 7th of November last, Dr. Pike, of Malvern, telegraphed for me to go over and make an exploratory incision in a patient under his care. When I got there I found that the patient, a young lady of twenty, under the joint care of Dr. Wadhams and Dr. Pike, had symptoms of intestinal obstruction with undoubted peritonitis. Dr. Pike had a suspicion which he expressed before the operation, that it really was a case of acute peritonitis from some trouble with the right Fallopian tube, symptoms of that having been in existence for two years, ever since the patient had been chilled whilst skating. Dr. Pike's diagnosis proved quite correct. I removed a large quantity of purulent fluid from the abdomen, and I found

the contents of the pelvis all glued together with purulent lymph. There was no obstruction of the intestines, but the right Fallopian tube contained pus and had burst. I removed it, drained the peritoneal cavity, and she recovered perfectly. Now the abdomen and pelvis are perfectly healthy, but within the last three weeks she has begun to suffer from some mysterious symptoms of which we cannot make any satisfactory explanation save that they are probably spinal."

This last sentence was written as the result of a visit made with Dr. Pike to the young lady early in February. At that visit I found her greatly emaciated and suffering intense pain high up on the right side of the back. This pain was not constant in its situation, and there was no physical sign to give us a clue to its origin or its nature. We set it down as spinal, and from the exhausted condition of the patient we believed she had not long to live. I made a vaginal examination to satisfy myself that there was nothing wrong in the pelvis and I found nothing wrong, but the examination caused the patient some pain. From that moment, strange to say, her pain in the back vanished, she began to eat, and is now in perfect health. What I did I do not know, but I suspect I unwittingly undid some adhesion, and thus ended the patient's sufferings and restored her to health.

CASE 3.—In this instance I am again prevented from giving any indication of identity in order that I may give full details of the case.

The patient was quite young, barely twenty, and had been married about seven weeks to a young gentleman about two years her senior. Previous to her marriage she had enjoyed perfect health. About five years before his marriage her husband had contracted gonorrhœa of a comparatively mild character, and I am informed by the surgeon who treated him for it that he was completely cured. The young husband also declared that this gonorrhœa was the only thing of the kind he ever had, and I think there is no reason to doubt his truthfulness.

The newly-married couple went on the usual honeymoon and for the first week intercourse was extremely frequent, but about the eighth day it became painful to both, and to the husband's horror he discovered he was again suffering from gonorrhœa. There is not the slightest reason to believe that the wife was other than perfectly virginal at the time of marriage, the account given by the husband making this quite certain. She began on the ninth day after marriage to suffer from pain and scalding in passing water, the parts became swollen and tender, and severe pelvic pain was felt. Medical assistance was called in but unfortunately nothing was said to the doctor about vaginitis. She was kept in bed for about ten days with fever and increasing pain, and during that time a period came and passed over. After the period she felt much better and got up and went about. In the fourth week of their married life intercourse was renewed, the husband feeling much better as the result of a resumption on his own responsibility of the treatment which had originally cured him, that being the use of the oil of yellow sandal wood and the sulphate of zinc injection. Renewed intercourse brought on a relapse of the symptoms in both parties, and the use of the sulphate of zinc injection by the wife was followed by what was doubtless an attack of acute pelvic peritonitis. For this no medical assistance was summoned. She got well enough to move towards home in about ten days, but was again attacked at a house where they rested on a visit for a few days. There she was attended by two medical gentlemen for nearly a fortnight.

She had the following symptoms: distension of the abdomen, vomiting, intense pelvic pain, night sweats, delirium for two days, pulse running as high as 120, and a temperature occasionally of 104°. The most severe time of the symptoms was again during a period. I saw her first myself just after the cessation of this, and satisfied myself of the existence of effusion in the peritoneum and of the existence of a tender mass to the left

of the uterus, concerning which I expressed a belief that it was a purulent tube.

I advised her removal to Birmingham for the purpose of an abdominal section, and this I performed with results precisely as in the previous two cases. I found a quantity of purulent flocculent serum in the pelvis, the left Fallopian tube containing pus, some of which I think must have escaped at each of the periods into the peritoneum.

I removed the left Fallopian tube only and fastened in a drainage-tube. The patient made a perfectly uninterrupted recovery, and is now in perfect health, free from pain and menstruating regularly, and just as she did before marriage.

The husband has completely got rid of his symptoms. Marital intercourse has been resumed by due regulation of its frequency and the use of a cerate. I trust he will not again suffer from a rekindling of the old fire.

In these three cases we have illustrations of three methods by which this serious disease may arise; (*a*) the use of pessaries, (*b*) some chill or catarrhal affection, (*c*) gonorrhœa. The fourth cause known to me is puerperal peritonitis.

Of all the causes I think gonorrhœa is by far the most common, and the next most common is puerperal inflammation.

In some instances I am sure pessaries have been the initial cause, and in all cases they aggravate the condition. The most rare cases are those where the cause seems to be entirely catarrhal, or where no point of causation can be determined.

In conclusion, I have only two remarks to make.

The first is that the radical cure of this disease, indeed, relief of any kind for it, can be secured only by surgical operation. There is hardly a specialist of any note in this country, who has not had under his care some one or more of the cases on my list. The mortality of the radical cure must be very small as I have now operated sixty-five times without a death.

My second remark is to the effect that these cases exist in large numbers, that they wander about seeking relief and find it in one way only.

Dr. WYNN WILLIAMS rose to protest against the insertion of a stem in such a case as that mentioned in the paper. He should never have dreamed of doing so. He had again and again stated that his stem and shield were only applicable in cases of anteflexion, and if medical men would continue to insert them in such cases as that related they must take the blame on themselves, and not lay it on the instrument. Again he repeated that a stem cannot with any degree of safety be inserted into a retroflexed uterus without a support to the fundus. He presumed that in Case No. 1 the author did not attribute the pyosalpinx to the insertion of the stem, as the pus must have been present previous to its insertion, the abscess being ruptured by its insertion, probably a fortunate occurrence for the patient.

Mr. ALBAN DORAN believed that there was yet another cause of suppuration of the Fallopian tube not mentioned by Mr. Tait, namely, the introduction of a foul sound into the uterine cavity. In the out-patient departments of large hospitals it often happens that the same sound was used in the examination of a large number of women within the limits of two or three hours. Under such circumstances it was extremely difficult to ensure the perfect cleansing of the sound after every examination. Morbid mucus or discharges would lodge in small depressions upon the surface of the sound, and septic products might adhere to the oil or vaseline with which the sound had been lubricated. In this manner unhealthy material was introduced into the uterine cavity, and could thus set up a low form of inflammation of the mucous membrane of the body of the uterus, which might in many cases spread to one of the tubes, especially if its uterine orifice were dilated. In answer to Dr. Braxton Hicks, Mr. Doran had examined the fluid contents of several of the tubes sent by Mr. Tait to the museum of the Royal College of Surgeons within three days after their removal, and had found the contents to be pus and not broken-down epithelium floating in mucus.

Dr. BARNES said that Mr. Lawson Tait had opened out a new field in abdominal surgery. No doubt there would be some opposition to his views—timid opposition, on the one hand, from the far niente school; violent from the dogmatic. The results published by Mr. Tait were sufficient to show that cases existed which were eminently amenable to surgical treatment. Every one must have seen cases of women drifting into danger, and

whose lives were rendered wretched from conditions similar to those described and operated upon by Mr. Lawson Tait.

Dr. W. A. DUNCAN said he would be glad to know from Mr. Lawson Tait whether in many of his cases the distended tubes were fixed by adhesions, and if so, whether the operation was consequently rendered much more difficult? Dr. Duncan mentioned two cases he had recently seen; in one there was a double pyosalpinx, the left tube being fixed by pelvic cellulitis, and its contents ultimately ruptured into the vagina; in the other case, after two attacks of pelvic cellulitis, a very characteristic left pyosalpinx altogether disappeared.

The PRESIDENT thought Mr. Tait took somewhat too gloomy a view of the general prognosis in cases of tubal distension. Some certainly, though possibly they were the cases of hydrosalpinx rather than pyosalpinx, got better without operative interference; as in the case just referred to by Dr. W. Duncan. As regards the causes, pyosalpinx being generally a sequela of endometritis, it might be accepted as a rule that whatever induced endometritis might lead to consequent tubal inflammation, although puerperal troubles and gonorrhœa were certainly among the most frequent causes. He would like to ask Mr. Tait if in his answer he could give them any further information on the subject of diagnosis. Most writers spoke of the diagnosis, at all events, of the smaller fluid collections as extremely difficult. On the general question he was hardly prepared to say more than that while this operation was the latest it was not the least important of that surprising series of operations associated with abdominal surgery which began with ovariotomy.

Dr. HORROCKS asked how it was that if these cases were so frequent and so invariably fatal one did not oftener meet with them on the post-mortem tables of large hospitals. He did not know of any case having been seen at Guy's Hospital during the last eight years. Therefore if these cases were so frequent as Mr. Lawson Tait would have us believe, was it not highly probable that the great majority of them get well without operative interference?

Dr. FANCOURT BARNES congratulated Mr. Tait on his valuable paper. He now recognised, by the light thrown by Mr. Tait, several cases of pyosalpinx. He believed he had at the present time in his wards at the Chelsea Hospital for Women such a case.

Dr. GRAILY HEWITT believed the affection described by Mr. Lawson Tait in his valuable paper not a common one. Another cause not mentioned was occlusion of the canal of the cervix uteri. He mentioned the case of a lady who had a painful tumour in situation of left Fallopian tube, which was treated by opening the occluded cervix uteri by the sound, and relief

followed together with escape of puriform fluid. Here the diagnosis made was pyosalpinx.

Mr. KNOWSLEY THORNTON wished to know from Mr. Tait the respective numbers of the cases of hydro- and pyo-salpinx in this total of sixty-two or sixty-five. In one part of the paper Mr. Tait gave the total as sixty-two and in another as sixty-five. This was a matter of great importance, because while most of the Fellows would probably admit the gravity of cases of pyosalpinx, he for one could not admit the gravity of cases of hydrosalpinx. He had come across many cases of the latter pathological condition in the performance of ovariotomy, and so far as his experience went it was a condition giving rise to little if any trouble to the patient. Probably the rupture of an ordinary hydrosalpinx into the peritoneum would cause little if any disturbance, and very likely this was one of nature's commonest methods of cure. Cases of pyosalpinx were much more serious, though he believed that many of them were cured by discharging into the uterus. Still rupture into the peritoneum was a recognised accident and cause of death, and the two pathological conditions stood on a very different footing. The relative proportion of cases of each in Mr. Tait's large experience was therefore of great importance, and of still greater importance was the differential diagnosis of the two conditions. If a pyosalpinx could be correctly diagnosed, then an operation for its removal was certainly as justifiable as many other surgical operations, but he doubted if the same could be said of hydrosalpinx. Would Mr. Tait tell the Fellows how he diagnosed these conditions? He himself had only twice operated for pyosalpinx, and in neither case were there any adhesions except a few filmy bands to neighbouring organs, though in one case the tubes were very large, and formed abdominal tumours.

Mr. S. MATTHEW OWENS.—Having during the past year seen some ninety-eight cases of abdominal section done by Mr. Tait, and amongst them some fifteen or so of pyosalpinx, I can vouch for the great good done by this operation. It will be found that many cases of so-called hysteria now prove to be diseases of the Fallopian tube. I well remember that one case, in which Mr. Tait thought he was going to do a genuine "Battey" (though he was doing it under protest), turned out a very severe case of pyosalpinx, but all her symptoms were so masked that every doctor whom she consulted called it "hysteria," and even Mr. Tait was himself deceived. One speaker (Dr. Horrocks) asks why do we not see these cases on the post-mortem table? My answer to that is this, that those who die from this disease are said to have died of acute peritonitis which is caused by rupture of the diseased tube. I must confess that one drawback in these cases is the difficulty of diagnosis, but if when a case whose constitutional symptoms all point to pus in the tubes, but in whom the

physical signs are wanting, then I say open the abdomen and see, for the risk in exploratory incisions is absolutely nil, and if it should happen to be a pyosalpinx the result is brilliant.

Dr. GALABIN asked whether the drainage tube used by Mr. Tait was a glass one, and whether the fluid used for washing out the peritoneal cavity was plain water or what other fluid.

Dr. MURRAY also considered the minute diagnosis of such cases should be given to obviate unnecessary operations. He congratulated Mr. Tait on his successes, and thought that perhaps the Lock Hospital might afford opportunities for verifying the influence of gonorrhœa.

Dr. HEYWOOD SMITH asked Mr. Lawson Tait whether if a diagnosis was made of hydrosalpinx it would not be as well to aspirate instead of proceeding to the major operation.

Mr. LAWSON TAIT, in reply, said that he must assure Dr. Wynn Williams that the implied condemnation of his stem pessary was not in his (Mr. Tait's) words. It was the expression of opinion of the gentleman whose words Mr. Tait had quoted, the medical attendant of the patient. In reply to Mr. Alban Doran, Mr. Tait thought it possible that inflammatory mischief, such as might lead to pyosalpinx, might be introduced by a foul sound. He knew of a case where gonorrhœa had been given by a dirty speculum, and he thought it might be given by a dirty sound. Concerning Dr. Barnes's question as to whether he would operate in such mischief during the puerperal state, he would answer emphatically in the affirmative. If he saw a case sufficiently early to promise a good result he would most undoubtedly open the abdomen of a woman suffering from puerperal peritonitis, wash her out, and drain the cavity. So far he had not had such a chance. In reply to the President, he might say that he had no doubt that many cases of hydrosalpinx and probably some of pyosalpinx were cured by natural processes. Of the former he knew this was true, and now that attention was being drawn to the subject probably pathologists would find old cheesy masses in the Fallopian tubes, remains of pyosalpinx cured, just as chalky masses in the lungs indicated cured cavities. As to the diagnosis, he depended largely on the history, in which a clearly indicated point of starting of the disease in some inflammatory attack was generally given. Then there was pain, more or less constant, aggravated by movement, and particularly by intercourse. Menorrhagia was an almost constant symptom. Finally, there was the physical evidence of alterations in the pelvis, without which he (Mr. Tait) very rarely cared to operate. In the matter of diagnosis there was, as everywhere else, a considerable amount of speculation. He thought he was wrong perhaps once in ten times, but the mistake in the tenth case always taught him valuable lessons. In two recent cases mistakes were made of a curious and most interesting

kind. The first was a case in which Dr, Clement Godson, Sir Spencer Wells, and himself concurred in the view that a young lady suffered from pyosalpinx on the right side. The only thing wanting was the initial point in the history. The cause of the suffering turned out to be a small dermoid tumour of the right ovary, not bigger than a Tangier orange. In the second case, a patient from Germany, exactly the same thing was found, and he had now quite a group of cases of these small dermoid tumours causing agonising pain. Dr. Horrocks said these cases were not seen in London, but they nevertheless existed there, for many of his cases came from London, some even had been in-patients at Guy's Hospital, and the great majority of them had been in London for treatment at some time or other. These cases are not seen in the post-mortem room for a very simple reason that when they are killed by fatal peritonitis they are generally not inmates of hospitals, and dying in the hands of practitioners not habitually performing post-mortem examinations, they are recorded as cases of idiopathic peritonitis. But the records afford numerous cases of post-mortems where the rupture of a Fallopian or ovarian abscess has been found to be the source of peritonitis, which would have been inexplicable but for the post-mortem. A few of the cases have been attacked by peritonitis due to rupture during residence in hospital, but they are exceptional, as might have been expected. In answer to Mr. Knowsley Thornton's questions, he might reply from a general impression that hydrosalpinx and pyosalpinx occurred in the proportion of three to two, hydrosalpinx being relatively an unimportant disease, as far as danger to life is concerned. But we cannot stop short of dealing with matters which affect life only. Hydrosalpinx is a frequent cause of the most intense suffering, and therefore he would, and did, remove it by surgical operation without hesitation. He did not believe that the rupture of hydrosalpinx would ever be likely to prove fatal. In fact he had watched one for a long time which ruptured periodically. The patient died suddenly of heart disease, and post-mortem examination proved the diagnosis to have been perfectly correct. The specimen is now in the Hunterian Museum. The differential diagnosis between the two conditions cannot be made, as it is not unusual to find pus in one tube and serum in the other. The drainage tubes he used were of glass, and he washed the abdomen well out with plain water, without any antiseptic (Listerian) mixtures. He need hardly say that his sense of gratification at the reception given to his paper by the Society was extreme, and now the somewhat harsh criticisms and the occasional misrepresentations to which his work had been subjected would probably end.

A CASE OF IDIOPATHIC GANGRENE OF THE UTERUS.

By Lawson Tait, F.R.C.S.

E. W—, æt. 34, was admitted to the Hospital for Women, on account of vague pelvic pain and offensive watery discharge, on November 25th, 1880. The uterus felt soft and flabby, and was not fixed. The patient had feverish symptoms, a furred tongue and swollen abdomen. Quinine and mineral acid were given, but as no examination by speculum or operative proceedings of any kind were permitted by the patient, no clear idea could be formed as to the nature of the case.

At her own request she was sent home on January 2nd, 1881, and she died on January 4th.

A post-mortem examination was made by Dr. Saundby, on January 6th, and the following is a copy of his report:

"The liver was fatty, spleen and kidneys normal; the intestines looked normal; the omentum was blackened; the uterus was firmly adherent to the right side of the pelvis, and in removing it, it was unavoidably torn.

"On section it presented the appearance of a jet-black sloughing stinking mass, with only about a square inch of normal looking uterine wall at the fundus."

After the uterus had soaked in spirit for some days I examined it carefully. I found that it was gangrenous as described by Dr. Saundby, but I could discover no reason for the occurrence of this remarkable change. Certain that the patient had serious pelvic mischief during her residence in the hospital, I had proposed abdominal section to her, but this she declined. It would have probably been quite easy to determine the nature of the case by an exploratory incision, and the dead uterus might have been removed.

AN UNDESCRIBED DISEASE OF THE FALLOPIAN TUBES.

By Lawson Tait, F.R.C.S.

On January 10th I was asked by Dr. Clibborn to see a patient who had been under his care for a long time suffering from pelvic pain, so severe as to render her entirely unfit for her household work. She was thirty-six years of age, and had been married about ten years having had three children. She had been under many medical advisers, including myself, as I had treated her some years before as a hospital outpatient, but from none had she obtained any relief. Her sufferings consisted of constant aching in the pelvis, referred to both sides, exaggerated by the erect position, and increased to intense suffering during menstruation and after marital intercourse. She had become very much emaciated and looked haggard and ill. She was covered with an acne eruption, the result of the prolonged and fruitless use of bromide of potash, and her groins bore marks of repeated blisters.

Dr. Clibborn had called me to see her for the purpose of discussing the removal of the uterine appendages. On examination I found nothing in the pelvis, but it was evident that the examination gave the patient a great deal of pain, so that, even in the absence of physical signs, I was quite satisfied that there was something wrong, which justified us in making an exploratory incision.

This was done on January 31st. I found the fimbriæ of the tubes adherent by curious little nodules which felt in the fingers exactly like hard seeds like millet. The left tube was thus fastened to the ovary and the right to the pelvic wall. This seemed to me to be a pathological change quite sufficient to justify removal of the appendages, and this I did. The result has been complete relief of the patient from all her symptoms, and she is now, six

months after the operation, completely restored to health (June 9th, 1882).

I sent the appendages to Mr. F. S. Eve, of the College of Surgeons Museum, and he has been kind enough to favour me with the following report on the structures, the preparations of which are now mounted in the museum.

"The specimens of nodules on the Fallopian fimbriæ are interesting. Sections of the nodules present the following appearances:—Each nodule contains two, three, or more circumscribed, structureless (except for the occasional appearance of faint lamination), yellow masses, apparently in part calcified; the edges of some of the nodules are crenated. The surrounding connective tissue is very rich in large round cells.

"Of the nature and mode of origin of these masses I can offer no opinion. They are neither cartilage nor bone."

DECEMBER 5TH, 1883.

HENRY GERVIS, M.D., President, in the Chair.

Present—57 Fellows and 6 visitors.

Books were presented by Dr. Branfoot, Dr. Charles, the Royal Medical and Chirurgical Society, and the Edinburgh Obstetrical Society.

John Archibald, M.B., Edmund King Houchin, L.R.C.P. Ed., and Frederick Stocks, M.R.C.S., were admitted Fellows of the Society. George Henry Jackson, M.R.C.S. Eng. (Tottenham), was declared admitted.

The following gentlemen were elected Fellows :—J. Hewitson Bertolacci, L.S.A. (New Wandsworth) ; Charles Hamilton Hone Cameron, L.R.C.P. Lond. (Harlesden) ; F. Richard Eccles, M.D. (Ontario) ; Montagu Handfield Jones, M.R.C.P. Lond. ; Arthur Newsholme, M.D. (Clapham) ; Adolphus J. Richardson, M.B. Cantab. ; and Walter Pocock, M.R.C.S. (Brixton).

The following gentlemen were proposed for election :— Robert Boxall, M.D.; Arthur Henry Boys, L.R.C.P. Ed. (Bristol) ; George Henry Darwin, M.R.C.P. (Manchester) ; Edwards Angel Gaynes Doyle, M.R.C.S. (Trinidad) ; John Challen Duke, M.R.C.S. (Lewisham) ; James Gubbins Fitzgerald, M.R.C.S. (Balham) ; Alexander Forsyth, M.D. (Greenwich) ; John Alfred Masters, L.R.C.P. Lond. ; Asutosh Mitra, L.R.C.P. Ed. (Calcutta) ; and Bertram H. Lyne Stevens, M.R.C.S. Eng.

THE CAUSATION OF LATERAL OBLIQUITY OF THE FŒTAL HEAD.

Dr. Galabin showed three diagrams intended to illustrate the views which he had brought before the Society on a former occasion as to the causation of lateral obliquity of the fœtal head, namely, that whenever the head is so shaped that lateral obliquity secures a mechanical advantage by bringing a smaller diameter of the head into the opposed diameter of the pelvis, and when also the head is subjected to lateral pressure, the effect of the pressure is to bring about such a lateral obliquity.

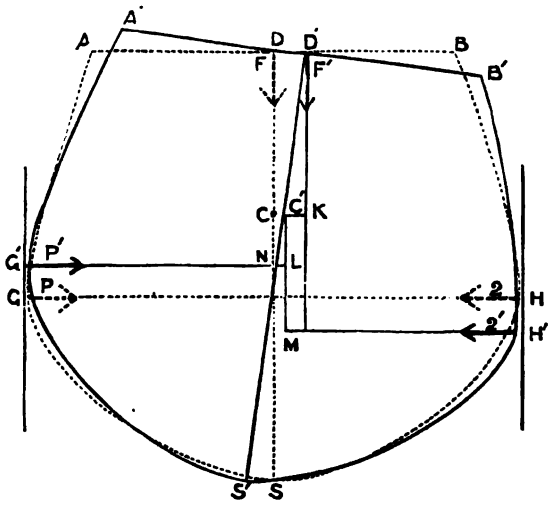
In the diagrams the fœtal head is supposed to be one with somewhat prominent parietal tubera, so that the biparietal diameter (G H) is greater than oblique diameters (subparieto-superparietal diameters), inclined at a slight angle to it, drawn from a point a little above the parietal tuber on one side to a point a little below it on the other. This is generally the case with the fœtal head before it has undergone moulding; and, when it is so, a slight lateral or biparietal obliquity of the head, brought about by a rotation on its antero-posterior axis, brings into opposition with any diameter of the genital canal a smaller diameter of the head than the large biparietal diameter which previously occupied it, and thus secures a mechanical advantage.

In Fig. 1 the dotted outline (A S B) represents a vertical transverse section through the parietal tubera of a fœtal head, shaped as already described, and engaged in the pelvis, whose walls are G′ G, H H′. The propulsive force (F) is assumed to act in the axis of the pelvis, and its direction will therefore be along D S, the central line of the section.* The biparietal diameter (G H) lies exactly

* The direction of the propulsive force does not actually lie in the plane of the diagram; but its projection upon that plane may be taken as representing it, so far as regards the lateral movement under consideration. Its distance above or below the plane, or any inclination it may have to the plane, will affect only the movement of flexion or extension of the head.

across the pelvis, P and *2* are the pressures at G, H, the ends of this diameter, and are equal to each other, the propulsive force not being inclined toward either side. The plane outline A S′ B′ represents the same section of the head when displaced by rotation on its antero-posterior axis to a biparietal obliquity of about 7°. F′, the displaced propulsive force, will act approximately along D′ K, a line

FIG. 1.



parallel to D S, its former direction. P′, *2* are the pressures on G′, H′, the points of the section which are now closest to the pelvic wall. P′, *2*′, like P, *2*, are equal to each other, and perpendicular to the pelvic wall. C is the projection on the plane of the section of the centre of gravity of the head, and lies on the line D S, C′ is the same when displaced. C′ L M is drawn parallel to D S, D′ K, and therefore perpendicular to G′ L, H′ M.

The effect of any force to increase or diminish the displacement is measured by its "moment" about C′, the projection of the centre of gravity of the head, that is to say, by the product of the force and the perpendicular from C′ upon its direction.

The effect of the pressure P′ tending to *diminish* the displacement is therefore represented by the product P′ × C′ L, that of the pressure *2′* to *increase* the displacement by the product *2′* × C′ M. Of these the latter is the greater. The difference of the two is the product P′ × L M, P′ and *2′* being equal. Hence, in the intervals of pains the pressures tend to *increase* the lateral obliquity.

The propulsive force F′ also tends to *increase* displacement, its effect being measured by the product F′ × C′ K. The frictions at G′, H′ (not shown in the figure) will act along the pelvic wall, and are equal to each other, the pressures P′ and *2′* being equal. The friction at G′ tends to increase displacement, that at H′ to diminish it. If R be the magnitude of the friction, R × G′ L represents the effect of the friction at G′, R × H′ M that of the friction at H′. Hence the frictions will have a very slight effect tending to *increase* displacement measured by the product R × (G′ L − H′ M) or R × 2 N L.

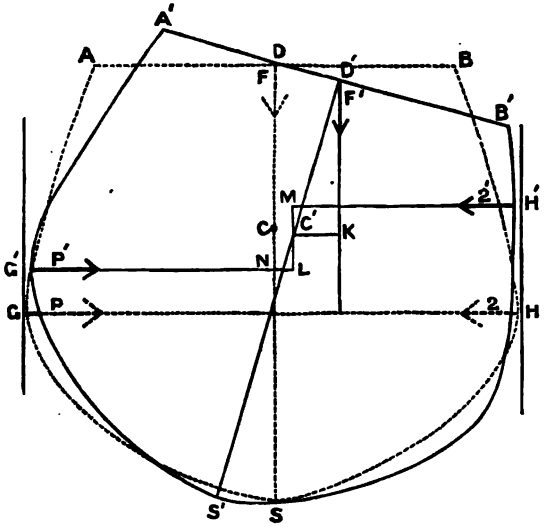
Therefore the tendency is to *increase* displacement, both in the intervals of pains and during the pains. It follows that, although the head is in equilibrium when the biparietal diameter lies precisely across the pelvic canal; yet, if it is displaced in the slightest degree from that position by any small obliquity of the propulsive force, or any other cause, the forces at work will *increase* the displacement up to and beyond an angle of 7°. With a head thus shaped, therefore, an exactly straight or "synclitic" position is one of *unstable equilibrium*, and the head can never long remain in such a position.

In Fig. 2 the same sections of the head are represented except that the section of the head indicated by the plane outline A′ S′ B′, is now represented as displaced through an angle of about 15° of biparietal obliquity. The figure is drawn exactly as before, except that the point H′, where the section is closest to the pelvic wall, now lies above H, and the point M falls above C′, the projection of the centre of gravity. This inclination of the head represents nearly that at which the greatest mechanical advantage is gained,

with a section through the parietal tubera shaped as in the figure.

The effect of the pressure P′ tending to *diminish* the displacement is now measured by the product P′ × C′ L, that of the pressure *2′* tending to *diminish* displacement by the product *2′* × C′ M. The sum is equal to P′ × M L, tending to diminish displacement, P′ and *2′* being equal. Hence, in the interval of pains the pressures now tend to *diminish* lateral obliquity.

FIG. 2.



The propulsive force F′, however, still tends to *increase* displacement, its effect being measured by the product F′ × C′ K, which is greater than before. The frictions, as before, will have a slight influence tending to *increase* displacement, the effect being measured by the product R × 2 N L.

Hence, if the propulsive force F′ is considerable in proportion to the pressures P′, *2′*, the lateral obliquity may still be increased *during the pains*, until it is arrested by

the base of the skull or the neck coming into contact with the uterine wall.

In Figs. 1, 2, it has been assumed that the pelvic walls are parallel at the ends of the biparietal diameter. This will be nearly true when the biparietal lies in the oblique diameter of the pelvis. The general effect will, however, be the same if the pelvic walls slightly diverge or slightly converge, provided the head is still pressed upon near the parietal tubera.

If the slight divergence of the displaced propelling force (F′) from parallelism with its original direction (F) be taken into account, the tendency to *increase* lateral displacement will be slightly increased, since the line F′ K will fall somewhat further away from c′ the projection of the centre of gravity.

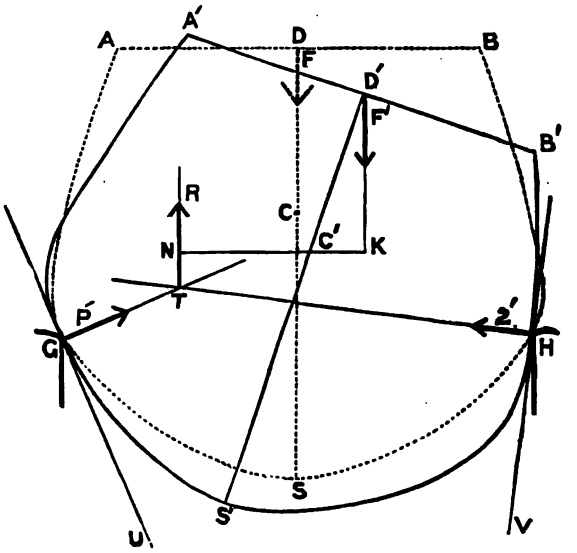
If the propelling force (F) be not acting in the axis of the pelvis, but inclined to it, the foregoing demonstration will still hold good for the component of the propulsive force resolved in the axis of the pelvis. The component resolved perpendicular to that axis, with the reaction of the pelvic wall which it calls out, will form a "couple" of equal and opposite forces. The effect of this couple will be either to promote or to resist the biparietal obliquity according to the direction of the obliquity of the propelling force.

In Fig. 3 is represented a different state of things, namely, a section through the parietal tubera of a fœtal head, shaped as before, arrested above a pelvic brim, the opposed diameter of which (G H) is a little too small to admit the biparietal diameter. The dotted outline A S B shows the head in an exactly straight or synclitic position. The plane outline A′ S′ B′ shows it displaced to a biparietal obliquity of about 18°.

F is the propulsive force assumed to be acting in the axis of the brim. F′ is the displaced propulsive force acting approximately parallel to its former direction, so that D′ K is parallel to D S. Let f' and $2'$ be the resistances to the displaced head at the points G, H. f' and $2'$

disregarding frictions) act perpendicularly to the surface of the head and at right angles therefore to G U, H V, the tangents to the section of the displaced head at G H.

FIG. 8.



Let the directions of P′, 2′, meet in the point T. The resultant R of the forces P′ 2′ must pass through the point T, and it must also, like the propulsive force F′, act in the direction of the pelvic axis, unless the head is being pushed bodily to one side or other. T N, the direction of R, is therefore parallel to D′ K and D S. Through C′, the displaced centre of gravity, draw N C′ K perpendicular to T N, D S, D′ K.

The effect of the propulsive force F′ tending to *increase* displacement, is measured by the product F′ × C′ K. The effect of R, the resultant of the pressures P′ and 2′ tending to *increase* displacement, is measured by the product R × C′ N. Hence, in all cases, the displaced propulsive force tends to increase the displacement. The resistances

tend *also* to increase it with a head shaped as in the figure, and will always do so unless the head is so shaped that the tangent to the displaced head H V is more inclined to the pelvic axis D S than the tangent G U. If friction be taken into account, the effect will be diminished, but will be still of the same kind. Therefore, when the head is arrested above a brim too small to quite admit its biparietal diameter, the tendency is for biparietal obliquity to be increased even beyond an angle of 18°, and until it is arrested by the base of the skull or the neck coming into contact with the uterine wall. Biparietal obliquity is likely therefore to be greater in such a case than when the head is engaged in the pelvis.

If the biparietal diameter has been so diminished by moulding that it is smaller instead of greater than the oblique subparieto-superparietal diameters slightly inclined to it, the pressures, when the head is engaged in the pelvis, tend to diminish any displacement instead of increasing it, and the "synclitic" position of the head becomes one of *stable* equilibrium.

ON THE MECHANISM OF LABOUR MORE ESPECIALLY WITH REFERENCE TO NAEGELE'S OBLIQUITY AND THE INFLUENCE OF THE LUMBO-SACRAL CURVE.

By Robert Barnes, M.D.

Nothing conduces more to the sure progress of science than frequent examination of its foundations. This consideration must be my apology for obtruding upon the Society a discussion upon the mechanism of labour, especially upon that part which concerns the relations of the fœtal head to the pelvis.

From the time when the memorable essay of Fr. C. Naegele was published, the doctrine set forth in it ruled

generally in Germany, France, and England, until it was shaken by Velpeau (1835), Caseaux (1841), R. U. West (1857), Duncan (1861), Paterson (1862), Leishman (1864), and especially by Küneke (1869). It was enthusiastically advocated by Edward Rigby, who published a translation of his master's essay in 1829, and adopted by Tyler Smith. At the present moment teaching as regards this point is unsettled.

It will be useful in setting out the case to describe briefly *the three obliquities of the head* as given by Küneke.

The *first is Roederer's, or the occipito-frontal obliquity.* The head may be imagined as rotating on its transverse axis so that the occiput drops and therefore dips in the pelvis, standing at a lower level than the sinciput. We are only incidentally concerned with this obliquity.

The second is Solayrès', who, in 1771, demonstrated that the head entered the pelvis in an oblique diameter of the pelvis. Solayrès' obliquity then refers to the relation of the head to the pelvic diameters.

The third or Naegele's obliquity is that upon which the greatest diversity of opinion prevails. It is that which it is the design of this memoir to illustrate. It is best to define this in Naegele's own words. He says: "In that presentation of the head which occurs most frequently, the head presents not with the occiput but with the vertex; in fact, with the right parietal bone, the posterior fontanelle being turned towards the left acetabulum. Upon examination at the beginning of the second stage of labour (*i.e.* when the os uteri is opening), and in those who have had children, the finger introduced in the direction of the central or middle line of the pelvic cavity, and brought in contact with the head, will touch the right parietal bone in the vicinity of its tubes; the two fontanelles are mostly found situated at an equal height, sometimes the anterior, but more frequently the posterior one a little lower. At the entrance of the pelvis the head does not take a perpendicular but a perfectly oblique direction. So that the part which lies lowest or deepest

is neither the vertex nor the sagittal suture, but the right parietal bone. The sagittal suture is much nearer to the promontorium than to the os pubis, and divides the os uteri, which projects backwards and generally somewhat to the left across, into two very unequal segments."

Naegele enforced this statement by the observation of the caput succedaneum which forms upon the posterior and upper quarter of the right parietal bone (the first position being understood), and if delayed at the outlet, then covering the right parietal bone and a part of the occiput.

Naegele also insisted that the head preserved somewhat of the Solayrès' obliquity even at the outlet of the pelvis and during its exit. This, which was not generally recognised at the time when he wrote, is now, I believe, universally admitted, Küneke alone excepted. But Naegele further showed that his own obliquity was also preserved to the end. He says: "When the head has sunk completely into the cavity of the pelvis and approaches the external opening, the posterior fontanelle is still found corresponding to the left foramen. If the finger be introduced nearly in the centre of the pubal arch, in the direction of an imaginary median line of the pelvic cavity continued forwards or outwards, its point will touch pretty exactly upon the middle of the superior and posterior quarter, sometimes the middle of the posterior half of the right parietal bone. . . . The posterior fontanelle at last gradually moves itself in a direction from left to right (frequently more or less from above downwards), and the occipital bone advances from the side of the pelvis under the arch of the pubes. It is not, however, the centre of the occiput that advances under the pubal arch, but the head approaches the os externum (vulva) with the posterior and superior part of the right parietal bone, and remains in this position until it has passed through the outlet of the pelvis with the greatest circumference which it opposes to it. It is, in short, the posterior and upper part of the right parietal

bone which passes through first at the os externum. . . . . The right tuber parietale will be felt distinctly clearing the labia before the left." There must, then, be obliquity of the head at this stage.

E. Rigby sums up the case thus: "the head enters, passes through, and emerges from the pelvis obliquely; and this is the case not only as to its transverse diameter, but also as to the axis of its brim, the side of the head being always lowest or deepest in the pelvis. This shows the beautiful mechanism of the process for, on account of its oblique position, there is no moment during the whole labour at which the greatest breadth (still less length) of the head is occupying any of the pelvic diameters."

Naegele examines the cases of other presentations of the head and of the breech, and shows that all are subject to the same law. Throughout the following argument, I assume the typical position recognised in this country as the first, that is, the right occipito-anterior.

Tarnier,* who does not admit Naegele's obliquity, thus explains the condition observed: "The opinion (that the anterior parietal protuberance was lowest in the pelvis) rested upon the fact that the anterior parietal is more easily reached than the posterior parietal when, the head entering the brim, the vaginal touch is practised. The fact is true, but it is badly interpreted. If the right parietal is more accessible than the left . . . this is owing to the curve of the pelvi-genital axis. The axis of the vagina is not parallel to the axis of the brim; on the contrary, it is rather perpendicular. One understands, therefore, that the head placed perpendicularly at the brim, the exploring finger, following the direction of the vagina and of the inferior part of the pelvic canal, strikes immediately upon the anterior parietal."

We will now examine *the theory of the coincidence of the three axes* which Küneke, Duncan, and others assume to be true, an assumption which is the very foundation of the objections urged against Naegele's obliquity.

* Tarnier et Chantreuil, 'Traité de l'Art des Accouchements,' 1882.

Küneke bases his assumed refutation of Naegele upon the description of the pelvis given by Bakker.* This description and the drawing of it are undoubtedly accurate.

Bakker says: "Axis pelvis, qualem proposuit Levret, ad perpendiculum projecta per mediam partem conjugatæ superioris incidit in os coccygis, et in horizontalem protracta facit 30°, sive 60° cum linea perpendiculari. Notandum quod hacce linea coincidat ferè axis uteri gravidi, seu linea mediana, in quam colligantur vires expellentes ab omnibus uteri punctis demissæ, quarum directio plurimum facit ad partus mechanismum constituendum."

Bakker's description of the inclination and axis of the pelvis has received the sanction of Naegele himself.† Naegele traces the history of the subject, shows that Heinrich Von Deventer, Joh. Jac. Müller, Smellie, Röderer, Levret, Camper, Stein, and others have arrived at conclusions upon the subject more or less approaching accuracy. He then describes his own researches. He tells us that in a letter written to Froriep in 1810, basing upon a small number of observations on the living, he described the inclination-angle of the brim as 55°, but after further measurements he made it 59°—60°.‡ That is, he confirms Bakker. The figure he gives is well known, it agrees with Bakker's.

After this description of the pelvis it is not without surprise that we find so careful and conscientious a teacher as Leishman expressing the following criticism. "In admitting the general accuracy of most of Naegele's descriptions, I assume that the fundamental error from which more than any other his mistake arose, was ignorance at the time he wrote his essay on the subject of the great obliquity of the brim in respect to the horizon. There must, I think, have been remaining in his mind some remnant of the old idea of the horizontal brim, for

* 'Descriptio iconis pelvis femininæ,' Groningen, 1816.

† 'Das weiblichen Becken betrachtet in Beziehung auf seine Stellung und die Richtung seiner Höhle,' 1825.

‡ 'Med.-Chir. Zeitung,' 1819, and 'Das weibliche Becken,' 1825.

it must be remembered that his attention was not directed to the relation which the pelvis bears to the trunk and limbs until some years after the publication of his paper on the mechanism of labour."

But we have just seen that the views upon this subject arrived at by Naegele from independent observations, correspond closely with those of Bakker, upon which Küneke, Duncan, and Leishman base their own deductions.

Thus, Naegele began by establishing the true relations of the pelvis, and then he, upon that knowledge, studied the mechanism of labour. He did not jump from the determination of the relations of the pelvis to conclusions as to the mechanism of labour.

Tarnier's conjecture as to the cause of the error of observation imputed to Naegele seems to be the same as that of Leishman.

All seem to agree then in accepting the accuracy of Bakker's and Naegele's description of the pelvis. It is the basis alike of those who affirm and of those who deny the lateral obliquity of the head.

The first divergence takes place in the structures built upon this basis. Bakker, Küneke, and those who follow Küneke affirm that the axis of the pelvic brim *nearly* coincides with the axis of the uterus. But they give no evidence whatever to justify this, the fundamental condition of their case.

Küneke reasons thus:

The inclination of the pelvic brim to the horizon is 60°; and, further, the uterus and its contents do not lie perpendicular to the horizon, but at about 30° of inclination. Now since the direction of the inclination of the pelvis and that of the uterus stand in opposite relation to the horizon and the two projected angles $60°+30°=90°$ or a right angle, so must the third angle of the triangle resulting therefrom be a right angle. Where the two inclination-directions intersect at the brim-plane and so make a triangle with the horizon, so also the vertical line of the skull must fall perpendicular upon the brim.

1. The head-plane then (represented by its base) must also lie at 60° to the horizon.

Hence it follows—

1. That the skull is absolutely inclined to the horizon.

2. It is parallel with the brim; and therefore Naegele's obliquity does not exist.

3. The law thus found is constant, and calls for no deviation of the normal bearing of the head.

This is a strking example of the *petitio principii*.

The first point of Küneke's argument namely, that the plane of the brim stands—the woman being erect—at an inclination of 60° to the horizon is beyond dispute. To contest that the three angles of a triangle are equal to two right angles would be to contest a demonstration of Euclid; but to contest the conclusions based upon this elementary truth, namely, that, therefore, the axis of the uterus and the axis of the fœtus must stand at right angles with the pelvic brim, is not to contest a demonstration of Euclid, although these conclusions are put forward with as much confidence as any axiom or obvious corollary.

This assumed coincidence of the head and pelvic planes constitute *synclitism*. So presenting, the head progresses in a straight line that is the axis, in what Küneke calls *orthophoric progression*. There is always, he affirms, excess of room in the pelvic diameters to permit of this direct progression.

When the basis of the head has cleared the brim the head undergoes three different movements, namely, one of progression and two rotatory. The first or progressive is also synclitic, that is, the plane of the basis of the skull maintains parallelism with the planes of the pelvis which it successively enters. He describes as pelvic cavity all that part of the canal which lies between the brim and outlet.

When the head has reached the floor of the pelvis, and is proceeding in its passage through the outlet, Küneke parts company with Duncan, Leishman, and Tarnier; in short he stands alone. As we have already seen, he does

not admit that the head emerges from the vulva obliquely. He says those who affirm with Naegele that the head does emerge obliquely are deceived by confounding two successive stages in the advance of the head. Thus Küneke is synclitic throughout; others are synclitic as far as the floor of the pelvis, and thenceforward become asynclitic, and fall in with Naegele—that is if I understand them correctly—for some of their statements are not free from ambiguity or inconsistency.

This remarkable divergence of opinion, exactly at the point where the head's relations to the pelvis are within easy reach of the finger, and partly within sight, suggests the presumption that if Naegele is right for the outlet, he may be right for the brim.

Let us proceed to examine the facts as to the *second assumption*, namely, that the axis of the uterus coincides with the axis of the pelvic brim.

In the first place during pregnancy and down to the very moment of labour the relation of the axis of the uterus to that of the axis of the brim is certainly not constant. The frequent inclination of the uterus to the left or right is incontestable. In the second place, the inclination of the uterus to the horizon differs in different women, and in the same woman in successive labours, and even in successive stages of the same labour, under the varying relations of several factors, the most obvious of which are:

1. The stature of the woman.
2. The attitude of the woman.
3. The length of the uterus.
4. The tonicity of the abdominal walls.

In primiparæ of fair stature, the uterus is well embraced by the strong abdominal walls which carry the fundus back towards the spine. In such cases—the most typical and most genuine to this inquiry—the uterine axis is carried behind the perpendicular, sometimes to a considerable angle, that is, of 15° or more.

In pluriparæ the abdominal walls admit of the uterus

bagging forward from coincidence with the pelvic axis to a very considerable angle in front of it. This forward bagging is increased in women of short stature who cannot find room for the mature gravid uterus except by projecting the abdominal wall.

But it is contended that when labour sets in the uterus becomes erect and then comes into more direct relation with the plane of the brim. This is undoubtedly true to some extent. But when the abdominal walls are brought into play their action is to carry the fundus and body of the uterus upwards and backwards towards the spine, that is, behind the axis of the pelvic brim.

Then there is the inexorable law of accommodation, which compels the uterus to adapt itself more or less nearly to the convexity of the lumbo-sacral portion of the spinal column. The effect of this is that the uterus is commonly bent back, adjusting itself to the convex spine by a posterior concavity. The uterine cavity, and therefore the uterine axis, is not a straight line, but a curved line, as is seen in the figure, which shows what may be described as the "*parturient curve.*"

In 1868 Dr. Friedrich Schatz, of Leipzig, published an excellent memoir on this subject.* He contends that the direction of the united uterine force is nearly that of the uterine axis, and that it deviates from this as soon as the greater part of the child's head has left the uterus. Further, the direction of the abdominal pressure deviates from the axis of the inlet by an angle backwards of 10° or more. Again, the direction of the combined expelling force can never be in front of the uterine axis, may rarely coincide with it, but almost always is behind it, and so forms an angle with the axis of the inlet behind. The uterine axis already deviates from the axis of the inlet before the partial emptying of the uterus during bearing-down pressure, by an angle of from 5° to 10° backward.

Now comes the *third postulate :* the axis of the fœtus coincides with that of the uterus and that of the pelvic brim.

* 'Der Geburtsmechanismus der Kopfendlagen,' 1868.

Inasmuch as the axis of the fœtus is, under the hypothesis, governed by the axis of the uterus, it follows that, if the axis of the uterus does not necessarily or usually coincide with the axis of the pelvic brim, neither can the

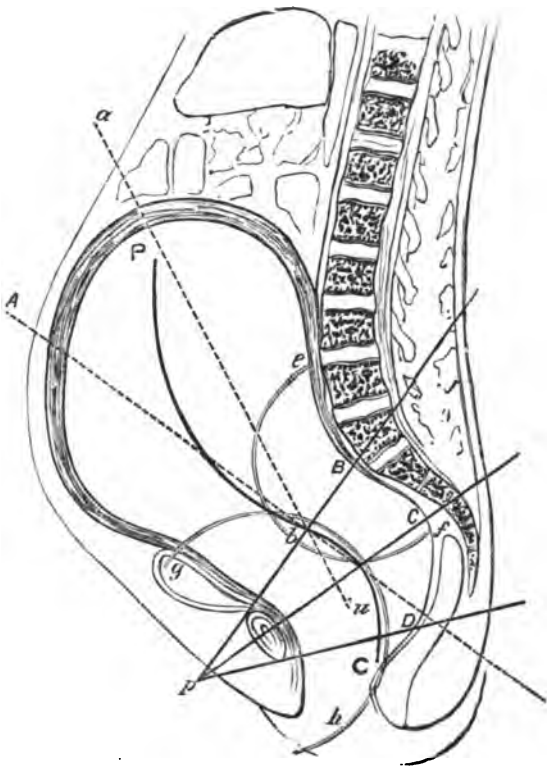


DIAGRAM CONSTRUCTED ON CHIARA'S FROZEN SECTION TO ILLUSTRATE DR. BARNES' 'MEMOIR ON THE MECHANISM OF LABOUR.'

A D. Axis of brim of pelvis.	*p C.* Plane of cavity.
a u. Axis of uterus.	*p D.* Plane of outlet.
A ba. Angle of divergence of uterine axis from pelvic axis.	*e f.* Barnes' curve.
p B. Plane of brim.	*g h.* Carus' curve.
	P C. Parturient curve.

axis of the fœtus. But we may go further, and we shall see that the axis of the child does not necessarily coincide with that of the uterus. That is, the uterine axis might

coincide with that of the brim, and still the axis of the child may stand at an angle. Not to speak of the decided deviations which constitute or merge into oblique or transverse presentations, there must be numerous degrees of obliquity between these and the normal obliquity described by Naegele.

Thus Schatz* found in Braune's section that the deviation between the pelvic extremity and the head of the fœtus was measured by an angle of 30°, and between the head and trunk on a line with the shoulders by an angle of 13°. The child's body does not represent a straight line. It is always curved, adapting itself more or less nearly according to the presence or absence of liquor amnii and other conditions, to the "parturient curve."

We may now safely conclude that the coincidence of the three axes is not demonstrated. And as it cannot be taken for granted, the cardinal point upon which the objection to Naegele's obliquity turns must be abandoned.

The supra-pelvic portion of the parturient canal is curved, and therefore the child's body must also be curved.

We will now proceed to the study of the question by the examination of the anatomical and physiological facts. We possess two anatomical pieces of incontestable value, those of Braune and of Chiara.

Braune's plates are taken from nature. A woman, about 35, drowned herself during labour; she was a well-built woman, her pelvis normal. The body was frozen and a section made. The head had entered the pelvic cavity, and was in the second position. The natural rotations of the head had begun, and the labour was at the beginning of the expulsive stage. The occiput was a little elongated under the moulding process of labour. Braune points out that the uterus has its long axis *nearly* perpendicular to the plane of the brim.

If we now remove the fœtus, as Braune has done (see Fig.), we see:—1. Again the angle, which the axis of the uterus forms behind the axis of the pelvic brim =

* 'Archiv für Gynäkologie,' Band vi, p. 413.

7·50°. 2. If we draw two longitudinal parallel planes (*a b*) from promontory of sacrum to tip of coccyx, and (*c d*) behind the symphysis pubis, we see that these planes are not parallel to the axis of the brim, that is, they could not receive between them the advancing head, and therefore the head must deviate from the axis of the inlet.

The head, descending under the promontory, must at once deviate from the axis of the brim in order to find room. At the stage here reached, the head near the outlet, the uterine and fœtal axes would be at their nearest approach to coincidence with the axis of the brim. But still there is not coincidence.

Reference to Braune's figure shows the head in the cavity and :—1. That the axis of the uterus and of the fœtus nearly coinciding form an angle of 12° with the axis of the brim. 2. That the greater part of the head lies in front of the axis of the brim prolonged to the pelvic floor. 3. That the anterior side of the head is at a lower level than the posterior.

These features are even more clearly seen in Chiara's section. The subject was a woman who, in her fourth labour, was brought to the Milan Hospital, where she died soon after admission ; the left arm protruded. The body was frozen and section made ; the pelvis was quite normal, the uterus represents a sigmoid curve, the "parturient curve" corresponds ; the axis, which the axis of the uterus forms with the perpendicular of the brim-plane, is 27°.

If we take the minimum conjugate, that a little above the middle of the symphysis, instead of that from the upper edge, we find the axis of the uterus falls at an even greater angle behind the axis of the brim, namely, 34°.

It is a characteristic feature of the true pelvis of woman that it forms a decided curve. This curve is usually represented by a circle, or rather a parabola, the centre or centres of which are at the symphysis pubis ; this is Carus' curve. Now, if we describe another circle from the symphysis as a centre, with a radius that touches the

promontory, it will be seen that there is a retreating space in the hollow of the sacrum outside this circle.

Or we may take an estimate of this outside space in another way. Draw a straight line from the promontory to the tip of the sacrum, and the expansion of the pelvic cavity below the brim, or upper strait, as it is well called by the French, is made evident.

If we draw a parallel to this promontorial-coccygeal line behind the symphysis, we get the anterior and posterior boundaries of an ideal parturient canal in the axis of the brim as far as the floor of the pelvis. This appears to be what Küneke and Duncan postulate, for on no other conditions can the head descend in the axis of the brim and keep free from lateral obliquity.

But it is impossible for the head to keep straight on. By the law of accommodation, as soon as the equator of the head has cleared the upper strait, it rolls over on its long axis, so that its posterior side adjusts itself in the hollow under the promontory, that is, the head quits the axis of the brim, canting backwards as well as advancing onwards.

The conjugate of the brim is 11 centimetres, the median conjugate is 13 centimetres.

Now it is a familiar fact that the head pretty closely fits the conjugate of the brim on entrance.

It is also a familiar fact that, having cleared the promontory, the head adapts itself to the hollow of the sacrum, that is, it rolls backwards under the promontory. This backward rotation is ignored by Künecke and by Duncan, who describe the head as descending straight in the axis of the brim to the floor of the pelvis.

The lumbo-sacral curve.

It will be admitted, I think, on fair consideration, that the study of the mechanism of labour has been too much limited to that part of the parturient canal which lies in the true pelvis, that is, below the promontory. I wish to

point out that the appreciation of the mechanism of labour cannot be complete without adequate study of the entire canal. Küneke and his followers do, indeed, take note of the uterus; but there is scarcely a hint as to the share which the arch of the lumbar vertebræ and the promontory take in determining the relations of the uterus and fœtus.

Yet we may find in this part of the parturient canal most important influences; and even a counterpart of the mechanism observed at the outlet.

This may be illustrated in the following manner:— Describe a circle from the promontory as a centre with a radius extending to the middle of the brim. This circle will indicate roughly the course which the fœtus must take to enter the pelvis. It is the counterpart of Carus' curve. It represents for the upper strait or inlet what Carus' curve does for the lower strait or outlet. To get into the pelvis the head must double the promontory. This curve, I trust I may without undue presumption, distinguish by my name.

This curve I first described as the "curve of the false promontory," considered in its relations to the mechanism of labour in contracted pelvis, in which it assumes increased importance.

The curve of the lumbar vertebræ is one of the main factors which determine the relations of the uterus and fœtus to the true pelvis.

During gestation, the anterior wall of the uterus bulges out more than the posterior wall. This latter is flattened and even a little concave at its lower part in order to adapt itself to the spinal curve. This preponderance of development of the uterus in its anterior wall is traced even into the inferior segment. This curves up under the promontory, so that the os is felt commonly much nearer to the sacrum than to the pubes; and the anterior part of the lower segment forms a pouch which receives the larger part of the fœtal head or presenting part.

This curvature forwards of the lumbo-sacral spine is,

I believe, the main factor in producing the dorso-anterior attitude of the fœtus. The spine of the fœtus firm and a little bowed coming in contact with the lumbo-sacral curve is necessarily deflected, and its yielding, incurved anterior aspect adapts itself to the lumbo-sacral curve. This property and disposition of the fœtus permit the containing uterus also to execute a similar adaptation or moulding upon the lower part of the spine; that is, to be carried upward and backward behind the axis of the pelvic brim.

The true factor to consider is not the direction of the uterus and fœtus, but the resulting axis of the driving forces. It may be true that this force-axis depends greatly upon the relation of the axes of the uterus and fœtus to the pelvis, but it is not necessarily identical.

We have seen that the axis of the uterus stands at an angle of more than 10° behind the axis of the brim. Assuming that the axis of the expelling force of the uterus is coincident with its own axis, we have already a deviation of 10° or more behind the brim-axis. Then we have to add the driving-force of the abdominal muscles. The first action of the abdominal muscles is to push the uterus further back, increasing its angle of deviation. The resultant effect of these two forces is to produce an axis of driving-force behind the axis of the brim. The pressure of the abdominal muscles telling more upon the upper part of the uterus, thrusts this part especially back upon the spine, and therefore bends the child's body in greater convexity forwards, that is, it increases the obliquity of the head as it enters the brim. This bending of the child's trunk will be more marked if the liquor amnii have escaped. If the head present at the brim with its biparietal plane inclining ever so little—say at an angle of 5° only—it must infallibly, under driving-force transmitted along the fœtal spine, increase this obliquity, the base representing a lever of equal transverse arms, any excess of force bearing upon one arm will lower this arm, that is, the head will cant over on its side.

For the head to enter synclitically we have to imagine

two conditions: first, the head presenting in absolute parallelism; secondly, the driving-force bearing with absolute precision upon the centre of the base of the fœtal skull. These two conditions severally and combined can hardly exist; and, in fact, we have seen they do not exist.

It results from all this that the uterus forms a curved canal, especially marked in primiparæ when labour is at hand, when the lower segment of the uterus containing the head is lodged in the pelvis.

To complete the parturient canal we must then take into account the supra-pelvic portion. We shall find that each of the two curves, Barnes' and Carus', represents an elementary part of this canal. The first merges into second at the point of intersection in the pelvic cavity. The resultant double or sigmoid curve is the true *parturient curve*. This curve the head and body of the fœtus must take.

The lower part of this curve, the intra-pelvic is constant; the upper or supra-pelvic part is variable.

In proportion as the projection of the lumbo-sacral curve, including the promontory increases, Barnes' curve is more pronounced and the greater is the curve which the head must describe in order to enter the pelvis.

The planes of the uterus and the other soft parts as factors in determining the position of the head.

If the attention of those who have studied this problem have been almost exclusively bent upon the true pelvis, taking little or no account of the supra-pelvic spine, scarcely has more attention been paid to the part played by the uterine planes or valves. Yet the part these play in the mechanism of labour is of the first importance. I do not now speak of the driving force of the uterus, that, in connection with the driving force of the abdominal walls, has been considered. I now refer especially to what I

have called in the 'Obstetric Operations' *the upper or anterior or uterine*, and *the lower posterior or perinæal valves or planes.*

In primiparæ especially, the head often descends far into the cavity of the pelvis before the os and cervix uteri expand. The anterior wall of the lower segment of the uterus contributes a much larger part for the accommodation of the head than does the hinder part; it forms a distinct pouch. The os uteri therefore is rarely found in the axis of the pelvic brim, it is almost always directed somewhat backwards towards the sacral hollow. The anterior wall then carried down before the head-globe, although it may stretch out before the on-pressing head, permitting the anterior side of the head to descend, still acts as an inclined plane partly supported by the anterior wall of the pelvis, and so guides the head at first backwards under the promontory, where there is accommodation for it. This anterior plane acts especially when the equator of the head has passed the brim. In fact, just as the posterior wall of the uterus, supported by the lumbo-sacral curve guides the head forwards to pass the extreme point or cape of the promontory, so this anterior wall then takes up its function and guides the head under the promontory which is now doubled. The resistance offered by the posterior wall of the lower segment of the uterus when the head has entered the pelvis is rarely considerable. It has commonly retreated before the anterior segment has slipped up above the occiput. This stage reached, the head immediately encounters the posterior or perineal valve, that is, the floor of the pelvis. The influence of this valve or plane has been more generally appreciated. Hart especially has dwelt upon it. It takes an important share in changing the direction of the head into the lower part of the orbit of Carus' curve towards the outlet. Thus to summarise:—The posterior wall of the uterus supported by the extra-pelvic part of the lumbo-sacral curve directs the head obliquely into the brim, through the upper part of the orbit of Barnes' curve; then the anterior uterine

valve directs the head backwards under the promontory through the remaining part of Barnes' curve; then comes the perineal plane into play to direct the head forwards under the symphysis pubis in Carus' curve.

We may thus see in the mechanism of labour at the brim, the counterpart of the better understood mechanism of labour at the outlet. If there is obliquity of the head at its exit there will be, from the operation of analogous causes, obliquity at the brim.

We may now better appreciate *the theory of "synclitism,"* which lies at the root of the doctrine that the three axes coincide.

The best idea we can form of syncliticism is to take for illustration a pump or syringe. Here we have a disc accurately fitted to a straight cylinder set at a right angle to the axis of the cylinder; the disc itself thus represents the plane of each part of the cylinder as it moves up or down; there is perfect adaptation of the moving to the containing body, the driving force bears with constant exactness upon the centre of the disc, and there is equal uniformity of resistance to every part of the circumference of the disc, that is, there is stable equilibrium.

Now, if we suppose a cylinder that is curved, whose planes therefore are not parallel, whose diameters are unequal, and then that there is applied to such a cylinder a disc that is irregular in shape, that does not exactly fit the cylinder, and that the driving force, which represents the rod of the piston, is not set in the centre of the disc, and is moreover set into the disc by a pivot-joint capable of bending in any direction, it must be obvious that there can be no stable equilibrium from the moment that the disc is made to move. If we suppose what is difficult to realise, that the disc stands in parallelism with the plane of the mouth of the cylinder, the moment driving force is applied the disc will encounter an excess of friction on one side, that is, the equilibrium is destroyed, the disc will cant; there is asynclitism.

Without straining this comparison, we cannot avoid

recognising analogous conditions in the pelvis and fœtal head in their relations to each other

Again, we find that in labour the driving-force is propagated through the child's body, that is, through a flexible rod, which actually bends.

Taking all these things together: a curved canal, of varying calibre, not cylindrical, a travelling body of irregular shape that has to adapt itself to the shape of the canal, and a driving-force transmitted through a flexible rod not set centrally in the travelling body, we have a summary of the conditions of the problem. Under such conditions it would be marvellous for synclitism to exist or endure. It is hard to imagine, still more to prove, such a happy concurrence of compensating conditions as will counteract the inevitable tendency to obliquity.

I take the alternative view to Naegele's, as stated by Galabin :*—"The alternative view, as maintained by Duncan and others, is that the head enters the brim directly with its vertical diameter at right angles to the plane of the brim, and maintains this position in passing through the first half of the pelvic canal *whose shape is almost cylindrical.*" The error of this is palpable. The first half of the pelvic canal is not nearly cylindrical. If we compare the outline of the brim with the outline of the cavity we see at a glance that the brim forms a heart-shaped strait, whilst the cavity expands with a nearly circular shape. Moreover the circumference, and therefore the capacity, of the cavity exceeds that of the brim by about an inch. It is, as 41·50 cm. for the cavity to 39 cm. for the brim, or as 15·50 in. to 14·60 in.

Dr. Galabin further illustrates this point by showing that "the sacral promontory lies within the circumference of a perfect circle equal in area to the pelvic brim, whilst the symphysis pubis lies outside it."

We will now examine *the shape of the head.* And we must take the head as it is found above the brim before it has encountered any moulding from the forces of labour.

* Obstetrical Transactions.

Naegele, as expounded by Rigby, maintains, as we have seen, that the head assumes the oblique position in order that the greatest transverse diameter, the biparietal, may not be brought into relation with the diameter of the pelvis which the head enters. Küneke objects that there is always plenty of room. Duncan says "there is no appreciable gain from obliquity." Leishman puts the "cui bono." In the first place, Küneke's statement is at once disposed of by the fact that the head can rarely enter the brim without moulding, that is, there is difficulty. In the second place, actual measurements of the fœtal skull prove the fact that the diameter obtained by Naegele's obliquity is less than the biparietal. Dr. Galabin shows that a slight lateral flexion "of the head will diminish the diameter of the head presented to each diameter of the brim. He measured heads and found that, measured at an angle of about 20° with the biparietal between two points at equal distances of about ·6 inches above the left and below the right parietal tuba, this diameter was in all cases less than the biparietal. It was much greater in a head which passed last and had suffered no distortion." There is, thus, an immediate advantage in a flexion of nearly 30°.

This observation I can confirm by numerous measurements taken with care. It is in accordance with what is observed as the effect of labour, namely, the biparietal diameter is somewhat levelled down by moulding.

It is very true that the extreme biparietal diameter can hardly enter exactly in the conjugate diameter. One immediate effect of the hinder parietal protuberance impinging upon the promontory is to deflect it to the left; and this turning aside is attended by a deflection slightly upwards, that is, there is canting of the base of the skull, its fore side bending downwards. Thus the smaller dimensions of the head are brought into relation with the smallest diameter of the pelvis by the double obliquity, that of Solayrès and that of Naegele; the one is as necessary as the other; both being in obedience to the law of accom-

modation, and of movement in the direction of least resistance.

Now, if we pass on from the normal structure to *cases in which the conjugate of the brim is contracted,* we shall see that the departure from coincidence of the three axes becomes more and more marked with the degree of projection of the promontory. It equals 33.°

Take Braune's plates (A, B). The subject was a woman, aged about 25, who at term, but before labour, committed suicide. The body was frozen and section made. There was slight scoliosis. The true conjugate measures 9·5 cent. The median conjugate 12 cent., consequently the cavity of the pelvis expands in the antero-posterior direction nearly one fourth in excess of the brim; and this expansion is almost entirely formed under the jutting promontory.

To pass the upper strait, the head must enter obliquely. The parietal bone applied to the promontory is so forcibly compressed against it that a flattening depression or indenting is invariably observed under similar conditions, whilst the pubal parietal commonly preserves in a great degree its primal shape. The meaning of this is obvious. The side of the head which lies against the promontory is the more fixed of the two; the driving-force will therefore tell more especially upon the other end of the transverse head-lever; and, therefore, this end, the pubal side will move down into the pelvic cavity first. As soon as the equator of the head has cleared the brim, the rotation of the head on its long axis is increased; the head becomes still more asynclitic as the hinder side rolls up under the projecting promontory where it finds accommodation.

Schatz points out that the rotation of the head on its long axis or on the transverse axis of the pelvis, is not the only reason why the anterior parietal is deeper than the posterior, but that it also dips lower on account of its change of form, the sacral side being more flattened, so that the lateral compression of the head resulting in elongation, the anterior side of the head is more elongated

than the other. The like condition he adds obtains in a lesser degree in the frontal bones. This is well shown in Braune's figures (CD).

Obviously, this greater descent of the anterior or pubal side of the head takes place mainly as the head is passing or has passed through the brim. Still this observation of Schatz brings strong evidence in support of the theory of primal lateral obliquity of the head.

In the lesser degrees of conjugate contraction of the brim which admit of delivery by the forceps, the line of traction is more distinctly behind the axis of the pelvic brim than in normal labour. What is called "axis-traction" in such a case means traction well behind and under the jutting promontory in order to bring the head past it. The head makes a semi-revolution within a smaller sphere; the sacral side of the head describes a much smaller circle than does the pubal side; it is the more fixed, whilst the pubal side moving more easily gets lower in the pelvic cavity. It is for want of clear apprehension of this that the opponents of Tarnier's forceps continue to trust to imperfect instruments, of inadequate length, and wanting the perineal curve, and thus bring vicious pressure upon the anterior wall of the pelvis, running the dangers of injuring the bladder and of failing in delivery.

The lower relative position of the anterior side of the head when the head is on the brim, is demonstrated by the impressions made by the blades upon the head. If the forceps be introduced as I have taught—I am not now defending this teaching—the blades are passed up one on either side of the pelvis, and so they adapt themselves to the head. When adjusted, the blades lie in the opposite oblique diameter of the brim to that occupied by the head, and grasp the head also somewhat obliquely, so when the head is delivered, one blade leaves its impression on the anterior quarter of the parietal and adjoining part of the frontal bones, the other blade leaves its impression on the opposite side of the head, that is on the

posterior quarter of the parietal. Now, the mark of the anterior blade will be found to approach nearer to the base of the skull than the posterior blade. That is simply because the anterior side of the head was lower at the brim when it was seized than the other, that is, the head was in Naegele's obliquity.

In the mechanism of labour with head-last child, as in breech presentations, or turning, we find further illustration of the same thesis. In a well-formed pelvis and head to match, when the base of the head approaches the brim, it encounters the resisting forward incline of the lumbar spine; the side nearest this incline impinges upon it, and encountering a greater degree of friction than is encountered by the anterior side of the head—which finds the convex shallow of the anterior boundary of the brim ready to receive it—moves more slowly; and so the frontal side, revolving more freely in a larger circle, dips and enters the brim, the base presenting a cant or obliquity. If we are called upon to assist the delivery by traction, we find that, as with the forceps, the line of traction must, if we would economise force and minimise resistance, be directed backwards under the promontory, that is, in Barnes' curve. This is still more necessary when there is contraction of the brim.

In cases of head-last labours if the head is of moderate size and the pelvis roomy, and this rule of traction be judiciously observed, the head may come through with little or no moulding, that is, it may present its original spherical form. But if these conditions be not present, and especially if the pelvis is contracted, then the side of the head nearest the premontory becomes flattened or indented, giving evidence as clear as could an impression on wax or plaster, that the sacral side of the head had undergone excess of pressure.

The penalty again of neglecting to make traction round and under the promontory is the interference with the proper course of the head, the bringing vicious pressure upon the anterior wall of the pelvis, necessitating a

greater expenditure or waste of power and diminishing the chance of delivering a live child.

As we advance to the more decided cases of contraction in which it becomes necessary to perform craniotomy, we still see evidence of the work of the same law. The promontorial projection being more pronounced, it overhangs the cavity of the pelvis, and so the entering part of the child is compelled to revolve sharply backwards. Hence the importance of an axis-traction craniotomy-forceps or cephalotribe on the model designed by Dr. Fancourt Barnes.

We may now see how far the objections which have been brought against Naegele's doctrine have been sustained.

These principal objections may be stated as follows:

1. The fundamental objection urged by Küneke, and relied upon by Duncan, Leishman, and others is that the three axes of the plane of the brim, of the uterus and of the fœtus coincide. This we have seen is a fundamental error. The axes do not coincide.

2. Subsidiary to the first objection is the assertion of Leishman that Naegele was ignorant of the inclination of the pelvis to the horizon. This is in direct opposition to Naegele's demonstration.

3. That the obliquity in question is not observed. Duncan affirming that "Naegele fell into error from not making the observations relied upon at the brim of the pelvis, and then only." This is simply an arbitrary assumption. Naegele expressly says that he kept his finger on the presenting point at and from the beginning of labour.

4. That it is impossible to find a mechanism to account for it (Duncan); that it would answer no useful purpose (Leishman); that there is always present plenty of room for the head to pass directly (Küneke). These objections, in fact, resolve themselves into the same thing. We have seen amply adequate mechanism in the form of the parturient canal, in the jutting promontory, in the narrow conjugate diameter of the brim, in the expanding cavity

of the pelvis below the promontory, in the shape of the head, and in the action of the uterine planes. We have seen that the head is widest in its biparietal diameter, and that a clear gain is obtained by substituting the oblique subparieto-superparietal diameter (Galabin).

5. Leishman urges against Naegele his statement that "the higher the head is, the more oblique is its direction, for which reason the ear can generally be felt behind the pubes without difficulty, which could not be the case if the head had a straight direction." We might grant that the obliquity is not greater in proportion to the height of the head, still it would not follow that the head is not oblique at the brim.

6. The situation of the caput succedaneum as seen after birth, invoked by Naegele, is objected to because this swelling varies according to the stage of labour, so that what is produced at the end of labour may be mistaken as the product of causes acting at the commencement. There is some force in this argument, but still it is not contended that the caput succedaneum as usually observed is inconsistent with Naegele's theory, and I submit that, having made careful observations upon this point, both in propitious labours and in labours effected mainly by the forceps, I am in a position to affirm that the head seized near or on the brim has been brought through the pelvis, preserving the caput succedaneum as it originally formed over the right tuber and posterior angle of the parietal, no complicating change subsequently occurring.

Throughout this inquiry I have not thought it necessary to do more than touch incidentally upon the evidence that might be drawn from direct clinical observation. The directly contradictory testimony borne by different observers, some affirming that they have felt the head presenting obliquely, others that it never does, is enough to prove the difficulty of settling the question in this way. Those who affirm will probably continue to affirm; those who deny will continue to deny. It might be urged that

those who deny, howsoever competent they may be to deny for themselves, are hardly competent to deny that others have felt what they themselves could not feel. But in the presence of the difficulty of reconciling conflicting statements as to subjective perceptions, it is obvious that the most philosophical mode of inquiry is to examine the anatomical, physiological, and mechanical factors of the problem.

I have purposely limited this inquiry to the position and movements of the head whilst above the brim, in its passage through the brim, and in its course in the upper half of the pelvic cavity. To have extended the inquiry beyond this would have been to weary the Society overmuch; nor is it necessary, since there is almost universal consensus of opinion in favour of Naegele's description from this stage onwards to complete delivery.

I therefore submit the conclusions:

1. That Naegele's obliquity is a real, and probably nearly constant phenomenon in natural labour.

2. That it is a necessary result of the combined action and relations of the factors working in the mechanism of labour, namely, the lumbo-sacral curve; the adaptation of uterus and fœtus to this curve through the backward pressure of the abdominal walls; the consequent throwing back of the fundus, and therefore of the axis of the uterus behind the axis of the brim of the pelvis; the jutting of the promontory forwards contracting the conjugate diameter below that of the biparietal diameter of the fœtal head; the consequent facility gained for the head to enter the brim by the substitution of a lesser or oblique diameter; the expansion of the pelvis below the promontory to a nearly circular form, compelling the head in obedience to the law of accommodation to adapt itself to the space under the promontory guided by the anterior uterine plane.

The PRESIDENT felt sure he was but expressing the general feeling in tendering the thanks of the Society to Dr. Barnes for his erudite, interesting, and important paper. In his own earlier years, influenced much by the teaching of Dr. Tyler

Smith, who was a close follower of Naegele and Rigby, he accepted the brim obliquity; after a while, influenced by the writings of Dr. Duncan and of Leishman, he held this view to be, at all events, unproved. But after hearing Dr. Galabin's valuable memoir on the subject some years ago he had come to the conclusion that in the case of a typical well-formed pelvis and head of average size the head entered the brim perpendicularly to the plane of the brim, that indeed there was no object in its entering in any other way; but that where the entrance of the pelvis was modified by any undue projection of the promontory, even the slightest, new conditions prevailed, and there would be a gain by the substitution of the sub-parieto-superparietal diameter for the transverse, which would be attained by the lateral tilting which occurred in the obliquity of Naegele. They were fortunate in having present this evening in Dr. Duncan one of the chief exponents of the view that Naegele's teaching was erroneous, and he could only hope that the result of the discussion might be to place the matter finally at rest. Before sitting down he might perhaps be allowed to express the gratification he was certain was felt by all Fellows present at seeing Dr. Wiltshire again among them after his recent severe illness.

Dr. MATTHEWS DUNCAN regarded it as very desirable to discuss and settle the mechanism of delivery in natural labour without more reference to that of unnatural labour than was necessary for the study of the former, and he regarded the two as having very little in common with a view to Naegele's obliquity. To the "curve of the false promontory" or Barnes's curve, to which the author gave an important place, he (Dr. Matthews Duncan) would give none at all in natural parturition. In the ordinary flat pelvis the head followed the lower part of the curve, and in a paper which he (Dr. Matthews Duncan) read to this Society in 1878, "On the Revolutions of the Fœtal Head in passing through a Brim contracted only in the Conjugate Diameter," he had described this movement. But the main arguments of the paper were in defence of the Naegele obliquity at the brim in early labour in natural cases, and to this alone he would now direct attention. In it there could not be expected anything like mathematical exactness. We could only discuss the matter comparatively roughly, slight variations being, of course, numerous and constantly occurring. Now, it was said that the right parietal in left occipito-anterior cases entered the brim before the left; and this was a matter of observation. We should not go to oppose or defend this proposition by ingenious arguments till it was settled as a matter of simple observation. He could only say that as a matter of fact he did not find the right parietal enter first, and he had no doubt it did not do so. He thought even superficial observation enough to prove this.

In confirmation of the occurrence of Naegele obliquity statements had been made regarding the caput succedaneum. Now this also was matter of fact; and he would assert that in early labour it was not the case, as stated by the author, that a caput succedaneum was formed upon the upper and posterior part of the parietal bone. A caput succedaneum of this stage was over the vertex. The head had not yet flexed, and it was only in the advanced second stage that a caput succedaneum was formed on the upper and posterior part of the right parietal bone. The caput succedaneum of the first stage of labour was the only one that threw light on this matter; it was upon the vertex, and could not be made to support, only to oppose, the Naegele obliquity. It was where it should be if the head entered synclitically with the plane of the brim.

In describing his views Dr. Barnes had spoken of the posterior wall of the uterus pushing the posterior side of the fœtal head, and of the anterior wall subsequently pushing the anterior or right side of the head. Such description he (Dr. Duncan) thought entirely erroneous, and without any anatomical ground whatever. The uterus acted as a whole, not one part of it at a time and then another part. Besides, even if one part acted while the rest did not that would make no difference, for the acting part would tighten the whole dome, and produce as a resultant force the same propulsion as if all acted at once. Besides, even if this view of Barnes's as to the action of parts of the uterus were correct it would not explain the Naegele obliquity.

The author had truly said that a cardinal question in this subject was the coincidence or noncoincidence of the axis of the brim of the pelvis, of the uterus, and of the fœtus. While Dr. Barnes adopted the view of Schatz and others as to a posterior obliquity of the uterus and fœtus, he (Dr. Matthews Duncan) held that they were, if not with mathematical exactness, yet practically coincident. On this point Dr. Barnes had appealed to the sections of Braune and Chiara as giving incontestable evidence. Now he (Dr. Matthews Duncan) thought their evidence on this point was misleading. If the drawings of these authors, most valuable and admirable in many respects, were examined it would be found that they were not faithful representations of the state during life. This was shown by the position of the intestines in front of the uterus, the flattening of abdomen, and the downward displacement of the perineum. But he (Dr. Matthews Duncan) regarded the evidence of Braune's drawings as in favour of the coincidence of the axes of the three—uterus, fœtus, and pelvic brim.

During early labour, when the ovum had descended, and the base of the skull was passing the brim, the abdomen already partially emptied, the uterus proper partially emptied, this organ was free to erect itself under pains, assume a dome-like

form, and come into a position having its own axis coincident with that of the brim, and also with that of the fœtus. Of this Dr. Matthews Duncan saw no reason to doubt. It was the general opinion—he believed it was Naegele's opinion. It was as yet, unfortunately, a matter of opinion. But posterior displacement of the uterus, of Schatz and of Barnes, would not account for asynclitic presentation.

It had been alleged by the author that during a pain the bearing-down action of the recti muscles flattened the anterior surface of the belly and pushed back the uterus, thus making, at this critical time, the uterine axis displaced still farther backwards behind the axis of the pelvic brim. This he (Dr. Matthews Duncan) regarded as quite inconsistent with daily observation. During a pain it was notorious that the uterine fundus became more prominent instead of being pushed back or the belly flattened. This, it was alleged, was done by contraction of the recti muscles. Now this error was the result of an incomplete view of the bearing-down action. It was effected by the working of a dome as extensive as the uterus itself. Of this active dome the recti muscles formed a part, but the crura of the diaphragm and the whole of that muscle acted simultaneously as well. If the recti acted alone there would be flattening of the belly; but bearing down was an action of a whole dome supporting the uterus and assisting it, and increasing the general contents pressure of the uterus proper. This dome was not all in contact with the uterine dome, but directly or indirectly it all acted on the uterine dome proper.

Dr. GALABIN said that eight years ago he had advocated before the Society the doctrine of the Naegele obliquity being of not unfrequent occurrence, though some of the chief obstetric authorities were opposed to it. He was glad to find this view supported by the great authority of Dr. Barnes. Spiegelberg also described a Naegele obliquity, though Dr. Galabin was unable to understand the cause to which he ascribed it. Differing somewhat from Dr. Duncan as to the matter of fact, he should say from his own observation that Naegele obliquity was not unfrequently observed, not indeed in easy labours, but yet in cases which could hardly be regarded as other than normal labours, in which there was no pelvic deformity, but the head met with considerable resistance. He ascribed the chief effect to the lateral pressures on the head in the pelvis when the parietal tubera were prominent and firmly ossified. If the demonstration which he had attempted to give in the diagrams presented that evening were correct, even the pressure of soft parts near the ends of the biparietal diameter might cause lateral obliquity. A head with a large biparietal diameter thrown exactly across the genital canal was in a position of unstable equilibrium, like a head in a position of brow presentation with its maximum

mento-occipital diameter thrown exactly across the canal. The head could never possibly pass through the canal in a position of brow presentation, but always became either flexed or extended in its advance, and it very rarely even became arrested in such a position (only twice in more than 35,000 cases in the Guy's Hospital Lying-in Charity). So with the biparietal diameter when larger than adjacent oblique diameters. But after moulding and flattening of the tubera it was often no longer larger, and the pressures then tended to resist and remedy biparietal obliquity. In the third diagram handed round it was shown that, when the head was arrested above a brim too small to admit the biparietal diameter, not only the displaced propulsive force but the resistances tended to increase lateral obliquity even beyond the point at which it secured a mechanical advantage, and until it was checked by the neck meeting the uterine wall. He thought that this agreed with experience, for he had sometimes found the sagittal suture within an inch of the promontory of the sacrum with the head arrested above the brim. He could not quite understand how Dr. Barnes considered that obliquity of the uterus had an effect. It appeared to him that posterior obliquity of the uterus in reference to the axis of the brim would produce opposite effects at different stages. Before resistances were in action, and so far as the head accommodated itself to the position of the trunk, tilting of the fundus uteri and breech of the child backwards would tend to tilt the sagittal suture *forward*, and produce the opposite of Naegele obliquity. When resistances came into play, however, the opposite effect was produced. The component of the propulsive force resolved perpendicularly to the axis of the brim, pushed the condyles *forward*, and produced a reaction of the anterior pelvic wall, pushing the centre of the head *backward*, so that a "couple" or pair of equal and opposite forces was produced, tending to cause Naegele obliquity. He did not think, however, that posterior obliquity of the uterus was nearly so great as might appear from frozen sections. Besides the prolonged effect of gravity in the dorsal position on the relaxed uterus, these showed the body in a position of expiration, whereas before a bearing-down effort a deep breath was taken, the diaphragm descended, and so threw the fundus uteri more forward. But if the effect were mainly due to the resistances a very slight posterior obliquity of the uterus would be sufficient to determine that Naegele obliquity, and not its opposite, should arise. And he thought that in this Dr. Barnes had probably found the correct explanation for many cases. He had pointed out in his former paper that, with the head in the first position, posterior obliquity of the uterus would produce Naegele obliquity, and the usual right obliquity would counteract it, when resistances were in action; and had suggested the inference that in cases in which Naegele obliquity appeared

too great to have any mechanical advantage, it might be a good plan to place the woman on her *right* side, and so encourage the right obliquity of the uterus. He could not accept Dr. Barnes's account of the action of the anterior uterine valve, for he did not think that displacement of the os uteri backward was a regular occurrence, although in occipito-anterior positions the anterior lip was pushed in advance at the stage when the occiput had not quite escaped from the os. With this exception he thought that the anterior lip was generally most noticeable merely because the examining finger was introduced nearly at right angles to the axis of the uterus. The effect of obliquity of the uterus in causing lateral obliquity of the head was only in operation so far as the propulsive force was transmitted through the condyles. The force transmitted through the liquor amnii still retained (the so-called "general contents pressure") always acted in the axis of the part of the pelvis in which the head was engaged, independent of any obliquity of the uterus, and had no tendency to produce lateral obliquity. This might be one reason why lateral obliquity was not observed in easy labours.

Dr. CHAMPNEYS had intended to make the same comment on the effect of posterior uterine obliquity on obliquity of the head as already been made by Dr. Galabin, viz. that its first effect should be to produce *posterior* instead of anterior obliquity of the head. He would also add that the condition known as pendulous belly, or "anteversion of the gravid uterus," was generally recognised as a cause of exaggerated Naegele obliquity. It would therefore need explanation how it came to pass that two opposite conditions (anterior and posterior deflection of the uterus) could produce the same immediate effect, viz. anterior parietal obliquity.

Dr. ROPER remarked that the unsettled question of Naegele's obliquity of the fœtal head, though possessing great interest in a physiological and scientific point of view, had not much importance in actual practice. The oblique transverse diameters of the head, as measured from a line drawn from a point above the parietal protuberance on one side to a point below the protuberance on the other side, were less than the direct transverse diameter through the parietal bosses; hence a slight advantage would be gained in facilitating the head through the pelvic brim by the obliquity of Naegele. In the case of a contracted conjugate Naegele's obliquity (if admitted) would be of very small value. Other obliquities are here of infinitely greater importance, as the substitution of flexion of the head for extension. The mechanism of this movement has been well described by Dr. Goodell.

Dr. BARNES, replying, expressed his gratification at the attention the Society had given to his paper, and his acknowledgment of the spirit in which it had been discussed by the several

speakers. Dr. Duncan thought the curve of the promontory, howsoever important in the case of "the curve of the false promontory," was not important in the case of the normal curve. Dr. Barnes, however, held that it was simply a question of degree. The condition was present in all cases. With reference to the action of the posterior wall of the uterus, Dr. Barnes did not contend that it acted by any special force, but mainly by forming an inclined plane resting upon the lumbo-sacral curve. It guided the head downwards and forwards in the upper or extra-pelvic portion of Barnes's curve. Dr. Duncan contended that for "practical purposes the three axes coincide;" but absolute coincidence was necessary to produce perfect synclitism; the slightest deviation of the uterine or fœtal axis from the axis of the brim was enough to destroy synclitism. He did not insist upon any particular or large angle, an angle of ten degrees or even less was enough to cause obliquity of the head. Dr. Duncan held that Braune and Chiara's figures were not true representations of nature. It was true that, as Dr. Galabin pointed out, the bodies were frozen after expiration and after lying in dorsal posture, but they were still essentially true; they were drawn from nature by consummate artists; the condition of the soft parts at the outlet pointed out by Dr. Duncan had no bearing upon the brim of the pelvis at which part the interest centred; the figure especially objected to by Dr. Duncan was one of contracted pelvis shown simply for the purpose of contrast; the other figures of normal subjects showed the presence of space for the intestines behind the uterus. As to the erection of the uterus, Dr. Barnes had referred to this in his paper as tending to bring the uterine axis into coincidence with the axis of the pelvic brim; but he maintained that this coincidence was not effected; he knew of no evidence to prove that the crura of the diaphragm contracted in such a way as to drive the fundus of the uterus forward, certainly the diaphragm could have no power to resist the powerful contraction of the abdominal muscles. If we took note of the direction of the force exerted in the act of turning when the hand was introduced into the uterus we should find that the line of traction was necessarily in a line with the "parturient curve," that is, behind the axis of the pelvic brim, and that the traction was performed at first downwards and forwards to get into the pelvis, then round the promontory and backwards. Dr. Barnes was especially pleased to find his views found support in the researches of a wrangler; Dr. Galabin had indeed anticipated him in some points. The observation of an asymmetrical head found on Cæsarian section by Budin, referred to by Dr. Wiltshire, Dr. Barnes thought must have been an example of malformation. In the children delivered by the section he himself had seen, as well as in those in which the head was delivered last, and so escaped moulding,

he had always found the head nearly spherical. In conclusion he repeated his confidence in the original observations of Naegele. He himself had enjoyed opportunities which justified him in trusting to his own clinical touch. He had lived two years in a lying-in hospital having to teach students how to examine and to recognise the presentations; he had, after Naegele's manner, kept his finger on the presenting part from the commencement of labour. In ordinary London practice the opportunity of examining at the beginning of labour was rare; but in the hospital patients came two or three days before labour, and he examined at the very onset.

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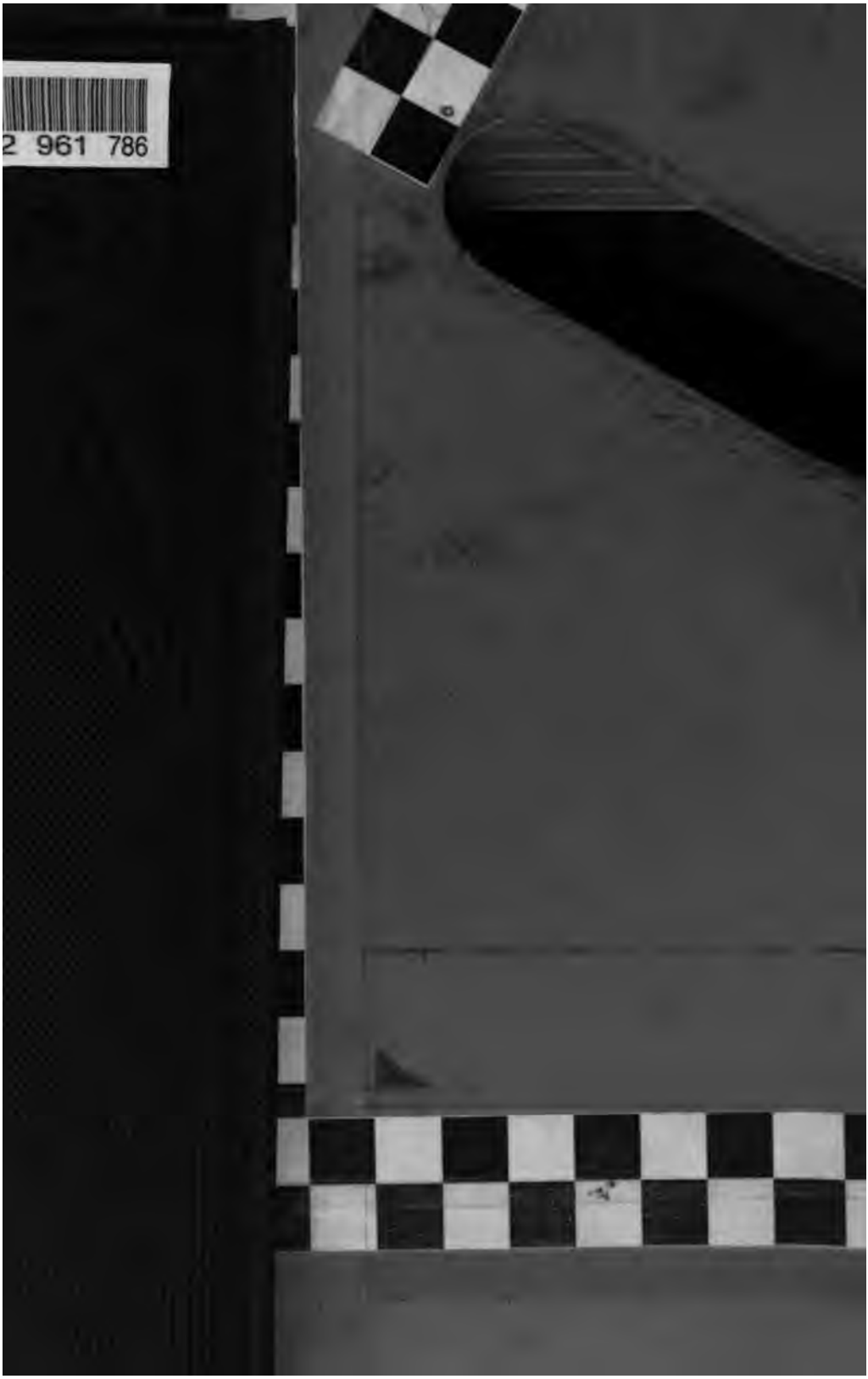
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